

10/782,060

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PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

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10/782,060

multiple databases

NEWS EXPRESS NOVEMBER 10 CURRENT WINDOWS VERSION IS V8.01c, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 25 SEPTEMBER 2006.

NEWS HOURS	STN Operating Hours Plus Help Desk Availability
NEWS LOGIN	Welcome Banner and News Items
NEWS IPC8	For general information regarding STN implementation of IPC 8
NEWS X25	X.25 communication option no longer available

Enter NEWS followed by the item number or name to see news on that specific topic.

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FILE 'HOME' ENTERED AT 14:46:33 ON 10 FEB 2007

FILE 'REGISTRY' ENTERED AT 14:46:48 ON 10 FEB 2007  
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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 9 FEB 2007 HIGHEST RN 920338-10-9  
DICTIONARY FILE UPDATES: 9 FEB 2007 HIGHEST RN 920338-10-9

New CAS Information Use Policies. enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

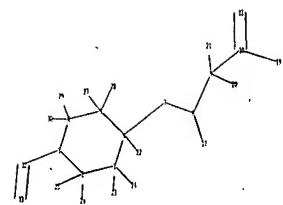
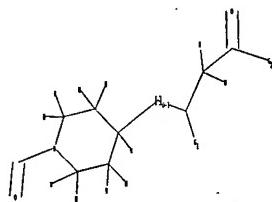
REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

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<http://www.cas.org/ONLINE/UG/regprops.html>

=>

Uploading C:\Program Files\Stnexp\Queries\10782060.str



chain nodes :

7 8 9 10 11 12 13 17 19 20 21 22 23 24 25 26 27 28 29 30

ring nodes :

1 2 3 4 5 6

chain bonds :

1-23 1-24 2-25 2-26 3-12 4-29 4-30 5-27 5-28 6-7 6-22 7-8 8-9  
8-17 9-10 9-20 9-21 10-11 10-19 12-13

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6

exact/norm bonds :

1-2 1-6 2-3 3-4 3-12 4-5 5-6 8-17 10-11 10-19 12-13

exact bonds :

10/782,060

1-23 1-24 2-25 2-26 4-29 4-30 5-27 5-28 6-7 6-22 7-8 8-9 9-10  
9-20 9-21  
isolated ring systems :  
containing 1 :

G1:Cy,Ak

G2:O,N,OH,NH2

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 8:CLASS 9:CLASS  
10:CLASS 11:CLASS 12:CLASS 13:CLASS 17:CLASS 19:CLASS 20:CLASS  
21:CLASS 22:CLASS 23:CLASS 24:CLASS 25:CLASS 26:CLASS 27:CLASS  
28:CLASS 29:CLASS 30:CLASS

L1 STRUCTURE UPLOADED

=> s 11  
SAMPLE SEARCH INITIATED 14:47:12 FILE 'REGISTRY'  
SAMPLE SCREEN SEARCH COMPLETED - 1395 TO ITERATE

100.0% PROCESSED 1395 ITERATIONS 9 ANSWERS  
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 25660 TO 30140  
PROJECTED ANSWERS: 9 TO 360

L2 9 SEA SSS SAM L1

=> s 11 ful  
FULL SEARCH INITIATED 14:47:20 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 27270 TO ITERATE

100.0% PROCESSED 27270 ITERATIONS 239 ANSWERS  
SEARCH TIME: 00.00.01

L3 239 SEA SSS FUL L1

=> file caplus  
COST IN U.S. DOLLARS SINCE FILE TOTAL  
FULL ESTIMATED COST ENTRY SESSION  
172.10 172.31

FILE 'CAPLUS' ENTERED AT 14:47:28 ON 10 FEB 2007  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

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FILE COVERS 1907 - 10 Feb 2007 VOL 146 ISS 8  
FILE LAST UPDATED: 9 Feb 2007 (20070209/ED)

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=> s 13  
L4 22 L3

=> d 14 ibib hitstr abs 1-22

L4 ANSWER 1 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2007:33775 CAPLUS  
TITLE: Preparation of piperidinecarboxylates as G protein-coupled receptor (GPR119) agonists.  
INVENTOR(S): Bradley, Stuart Edward; Fyfe, Matthew Colin Thor; Bertram, Lisa Sarah; Gattrell, William; Jeevaratnam, Revathy Perpetua; Keily, John; Procter, Martin James; Rasamison, Chrystelle Marie; Rushworth, Philip John; Sambrook-Smith, Colin Peter; Stonehouse, David French; Swain, Simon Andrew; Williams, Geoffrey Martyn PATENT ASSIGNEE(S): Prosidion Limited, UK SOURCE: PCT Int. Appl., 85pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
WO 2007003962	A2	20070111	WO 2006-GB50178	20060629
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,				

CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,  
 GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,  
 KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN,  
 MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU,  
 SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG,  
 US, UZ, VC, VN, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,  
 IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,  
 CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,  
 GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
 KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.:

GB 2005-13277

A 20050630

GB 2006-5946

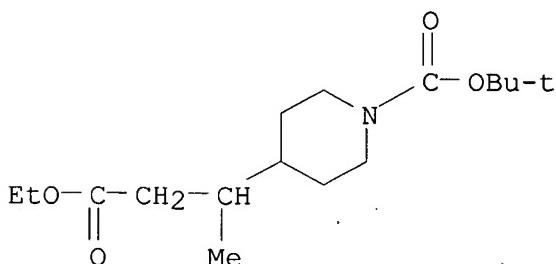
A 20060327

IT 203662-40-2

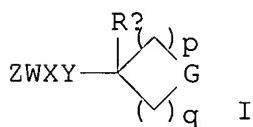
RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of piperidinecarboxylates as G protein-coupled receptor  
 (GPR119) agonists)

RN 203662-40-2 CAPLUS

CN 4-Piperidinopropanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]- $\beta$ -methyl-, ethyl ester (9CI) (CA INDEX NAME)



GI



AB Title compds. [I; Z = (substituted) Ph, 5-6 membered heteroaryl; W, Y = bond, (substituted) alkylene, alkenylene; X = CH<sub>2</sub>, O, S, CH(OH), halomethyl, CF<sub>2</sub>, CO, CO<sub>2</sub>, COS, NR<sub>5</sub>, SO, SO<sub>2</sub>, etc.; G = CHR<sub>3</sub>, NCO<sub>2</sub>R<sub>4</sub>, NCONR<sub>4</sub>R<sub>5</sub>, (substituted) N-heterocyclyl, N-heteroaryl, etc.; Rx = H, OH; R<sub>3</sub>

= alkyl; R<sub>4</sub> = (substituted) alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heterocyclyl, etc.; R<sub>5</sub> = H, alkyl; p = 0-3; q = 1-5; p+q = 2-5], were

prepared Thus, (4-methoxycarbonylbenzyl)triphenylphosphonium bromide in

dimethoxyethane was treated portionwise with NaH; tert-Bu 4-(3-oxopropyl)piperidine-1-carboxylate in dimethoxyethane was added followed by stirring for 20 h at room temperature to give tert-Bu 4-[(E)-4-(4-methoxycarbonylphenyl)but-3-enyl]piperidine-1-carboxylate.

I

in a cell line expressing recombinant human GPR119 generally increased intracellular cAMP levels with EC50's of <10 μM.

L4 ANSWER 2 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:13717 CAPLUS

DOCUMENT NUMBER: 146:121829

TITLE: Carbon-linked substituted piperidines and derivatives

thereof useful as histamine H3 antagonists and their

preparation, pharmaceutical compositions and use in the treatment of diseases

INVENTOR(S): Aslanian, Robert G.; Berlin, Michael Y.; Huang, Ying;

McCormick, Kevin D.; Mutahi, Mwangi W.; Shih, Neng-Yang; Ting, Pauline C.; Tom, Wing C.; Zheng, Junying

PATENT ASSIGNEE(S): Schering Corporation, USA

SOURCE: PCT Int. Appl., 88pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007002057	A1	20070104	WO 2006-US23937	20060619
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
US 2007010513	A1	20070111	US 2006-455873	20060619
PRIORITY APPLN. INFO.:			US 2005-692175P	P 20050620

IT 918500-82-0P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU

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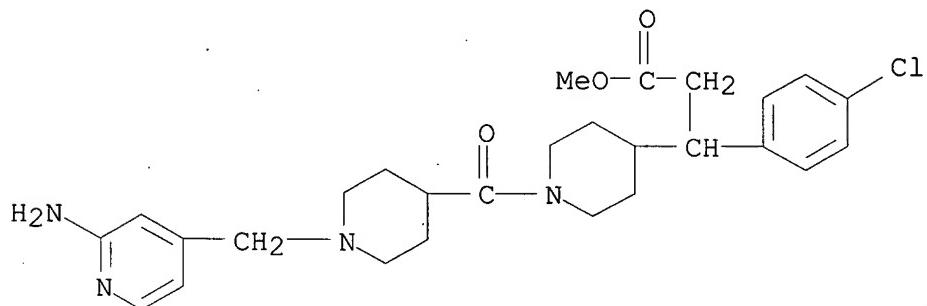
(Therapeutic use); BIOL (Biological study); PREP (Preparation); USES  
(Uses)

(drug candidate; preparation of carbon-linked substituted piperidines and

derivs. thereof useful as histamine H3 antagonists)

RN 918500-82-0 CAPLUS

CN 4-Piperidinepropanoic acid, 1-[[1-[(2-amino-4-pyridinyl)methyl]-4-piperidinyl]carbonyl]- $\beta$ -(4-chlorophenyl)-, methyl ester (CA INDEX NAME)



IT 918501-93-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);

RACT

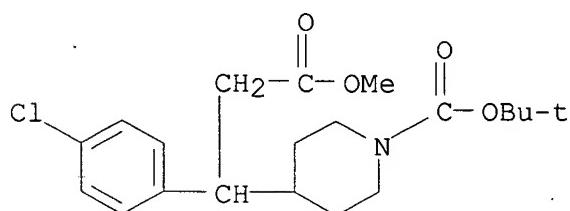
(Reactant or reagent)

(intermediate; preparation of carbon-linked substituted piperidines and

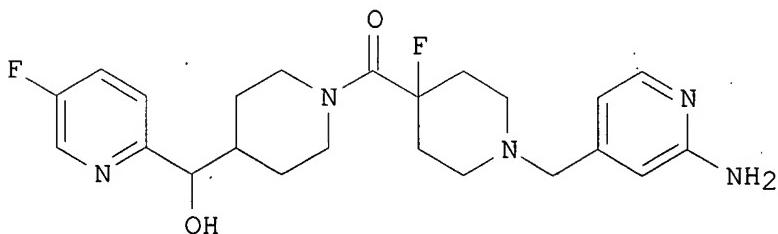
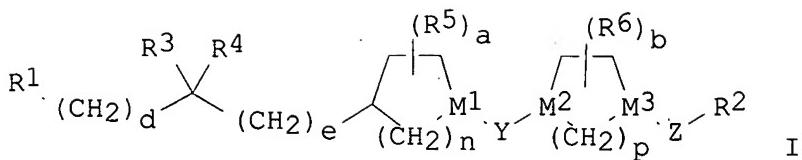
derivs. thereof useful as histamine H3 antagonists)

RN 918501-93-6 CAPLUS

CN 4-Piperidinepropanoic acid,  $\beta$ -(4-chlorophenyl)-1-[(1,1-dimethylethoxy)carbonyl]-, methyl ester (CA INDEX NAME)



GI



AB Disclosed are compds. of the formula I; or a pharmaceutically acceptable

salt thereof, compns. and methods of treating allergy-induced airway responses, congestion, obesity, metabolic syndrome nonalcoholic fatty liver disease, hepatic steatosis, nonalcoholic steatohepatitis, cirrhosis.

hepatocellular carcinoma or cognition deficit disorders using said compds., alone or in combination with other agents. Compds. of formula I .

wherein M1 and M3 are independently CH or N; M2 is CH, CF or N; Y is CO,

CS, C1-5 alkyl, C(=NOH) and derivs., and SO1-2; Z is a bond, (un)substituted alkylene, and (un)substituted alkenylene, etc.; R1 is H,

alkyl, alkenyl, (un)substituted (hetero)cycloalkyl, (hetero)aryl,  
etc.; R<sub>2</sub>

is (un)substituted alkyl, (un)substituted alkenyl, (un)substituted (hetero)aryl, and (un)substituted (hetero)cycloalkyl, etc.; R3 and R4 are

independently H, halo, alkyl, haloalkyl, hydroxyalkyl, alkoxyalkyl, etc.:

R5 and R6 are independently halo, alkyl, OH, alkoxy, haloalkyl, CN; etc.;

a and b are independently 0, 1 and 2; d and e are independently 0 and 1; n

and p are independently 1, 2 and 3; and their pharmaceutically acceptable

salt thereof, are claimed. Example compound II was prepared by addition of

addition of 2-bromo-5-fluoropyridine to N-Boc-piperidin-4-one; the resulting 1-Boc-4-[(5-fluoropyridin-2-yl)hydroxymethyl]piperidine underwent hydrolysis to give the free amine, which underwent amidation with 1-[2-(tert-butoxycarbonylamino)pyridinylmethyl]-4-fluoropiperidine-4-carbonyl chloride followed by hydrolysis to give the coupled product,

which underwent hydrolysis to give compound II. All the invention compds.

were evaluated for their histamine H3 antagonistic activity (data given).

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L4 ANSWER 3 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:1061760 CAPLUS  
 DOCUMENT NUMBER: 146:54689  
 TITLE: Design and Evaluation of a Novel Class-Directed 2D Fingerprint to Search for Structurally Diverse

Active Compounds

AUTHOR(S): Eckert, Hanna; Bajorath, Juergen  
 CORPORATE SOURCE: Department of Life Science Informatics, B-IT,  
 Rheinische Friedrich-Wilhelms-Universitaet, Bonn,  
 D-53113, Germany  
 SOURCE: Journal of Chemical Information and Modeling  
 (2006), 46(6), 2515-2526

PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

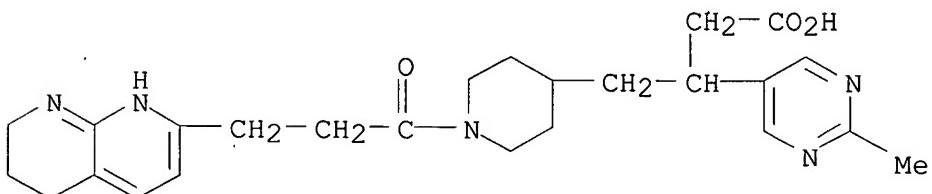
IT 669075-56-3  
 RL: PAC (Pharmacological activity); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (design and evaluation of a class-directed 2D fingerprint to search

for structurally diverse active compds.)

RN 669075-56-3 CAPLUS

CN 5-Pyrimidinepropanoic acid, 2-methyl-β-[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI)

(CA INDEX NAME)



AB Recent attempts to increase similarity search performance using mol. fingerprints have mostly focused on the evaluation of alternative similarity metrics or scoring schemes, rather than the development of new

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types of fingerprints. Here, the authors introduce a novel 2D fingerprint design (property descriptor value range-derived fingerprint or PDR-FP) that involves activity-oriented selection of property descriptors and the transformation of descriptor value ranges into a binary format such that each fingerprint bit position represents a specific value interval. The design is tailored toward multiple-template similarity searching and permits training on specific activity classes. In search calcns. on 15 compound classes of increasing structural diversity, the PDR fingerprint performed better than other state-of-the-art 2D fingerprints. Among the structurally diverse classes were six compound sets with peptide character, which represent a notoriously difficult chemotype for 2D similarity searching. In these cases, PDR-FP produced promising results, whereas other fingerprint methods mostly failed. PDR-FP is specifically designed for search calcns. on structurally diverse compds., and these calcns. are not influenced by mol. size effects, which represent a general problem for similarity searching using bit string representations.

REFERENCE COUNT: 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2006:164650 CAPLUS  
DOCUMENT NUMBER: 144:254006  
TITLE: Preparation of piperidine derivatives as melanocortin-4 receptor agonists  
INVENTOR(S): Bakshi, Raman K.; Dellureficio, James P.; Nargund, Ravi P.  
PATENT ASSIGNEE(S): Merck & Co., Inc., USA  
SOURCE: PCT Int. Appl., 78 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006020277	A2	20060223	WO 2005-US25505	20050715
WO 2006020277	A3	20060720		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,				

GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ,  
 LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA,  
 NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK,  
 SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU,  
 ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,  
 IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,  
 CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,  
 GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
 KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.:

US 2004-589089P

P 20040719

OTHER SOURCE(S): MARPAT 144:254006

IT 876756-71-7P

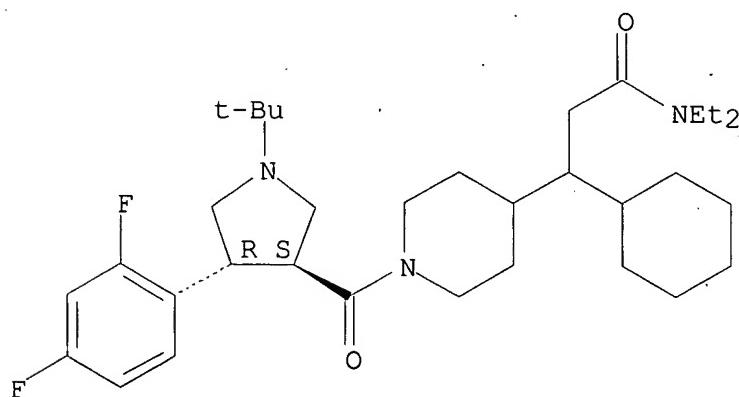
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU  
 (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES  
 (Uses)

(drug candidate; preparation of piperidine derivs. as MCR-4  
 agonists)

RN 876756-71-7 CAPLUS

CN 4-Piperidinopropanamide,  $\beta$ -cyclohexyl-1-[(3S,4R)-4-(2,4-  
 difluorophenyl)-1-(1,1-dimethylethyl)-3-pyrrolidinyl]carbonyl]-N,N-diethyl-  
 (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 876756-96-6P 876756-97-7P 876756-98-8P

876757-01-6P 876757-11-8P 876757-12-9P

876757-13-0P 876757-14-1P 876757-15-2P

876757-23-2P

RACT RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
 (Reactant or reagent)

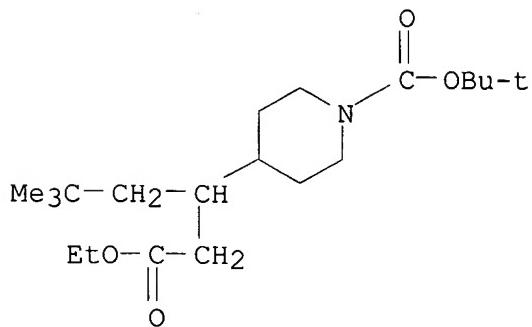
(intermediate; preparation of piperidine derivs. as MCR-4 agonists)

RN 876756-96-6 CAPLUS

CN 4-Piperidinopropanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]- $\beta$ -(2,2-

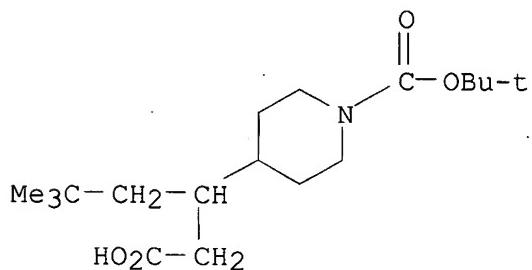
10/782,060

dimethylpropyl)-, ethyl ester (9CI) (CA INDEX NAME)



RN 876756-97-7 CAPLUS

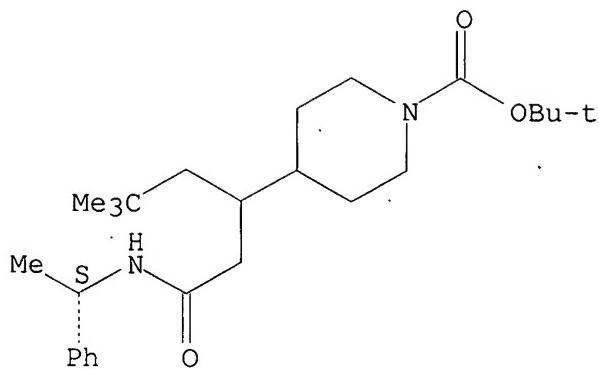
CN 4-Piperidinopropanoic acid, 1-[(1,1-dimethylethoxy carbonyl)- $\beta$ -(2,2-dimethylpropyl)- (9CI) (CA INDEX NAME)



RN 876756-98-8 CAPLUS

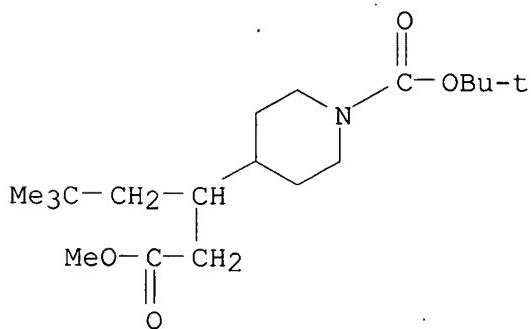
CN 1-Piperidinecarboxylic acid, 4-[3,3-dimethyl-1-[2-oxo-2-[(1S)-1-phenylethyl]amino]ethyl]butyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



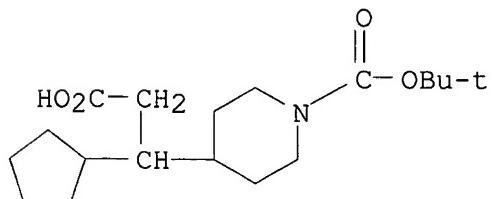
RN 876757-01-6 CAPLUS

CN 4-Piperidinepropanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]- $\beta$ -(2,2-dimethylpropyl)-, methyl ester (9CI) (CA INDEX NAME)



RN 876757-11-8 CAPLUS

CN 4-Piperidinepropanoic acid,  $\beta$ -cyclopentyl-1-[(1,1-dimethylethoxy)carbonyl]- (9CI) (CA INDEX NAME)

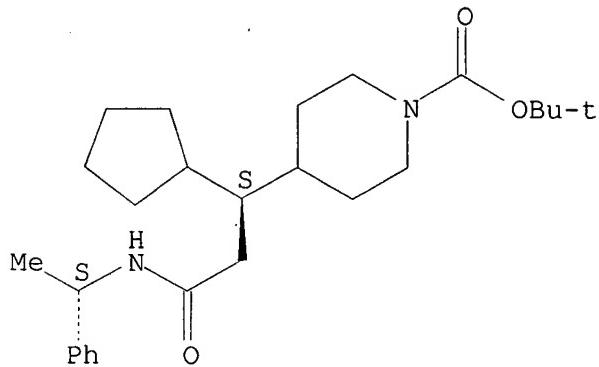


RN 876757-12-9 CAPLUS

CN 1-Piperidinecarboxylic acid, 4-[(1S)-1-cyclopentyl-3-oxo-3-[(1S)-1-phenylethyl]amino]propyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

10/782,060

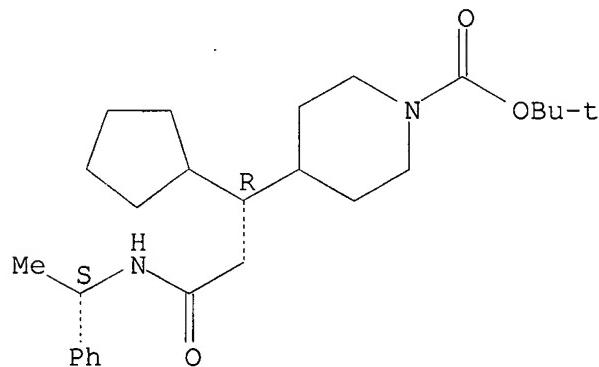
Absolute stereochemistry.



RN 876757-13-0 CAPLUS

CN 1-Piperidinecarboxylic acid, 4-[(1R)-1-cyclopentyl-3-oxo-3-[(1S)-1-phenylethyl]amino]propyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

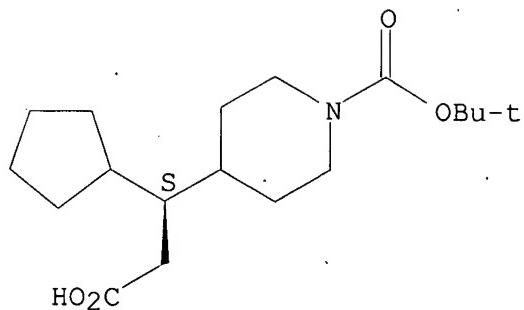


RN 876757-14-1 CAPLUS

CN 4-Piperidinepropanoic acid, beta-cyclopentyl-1-[(1,1-dimethylethoxy)carbonyl]-, (beta S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

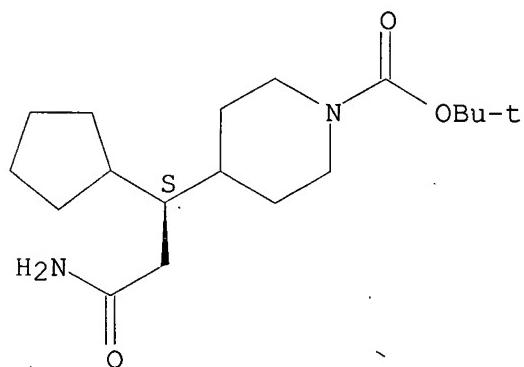
10/782,060



RN 876757-15-2 CAPLUS

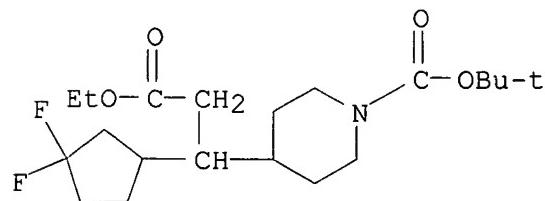
CN 1-Piperidinecarboxylic acid,  
4-[(1S)-3-amino-1-cyclopentyl-3-oxopropyl]-,  
1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 876757-23-2 CAPLUS

CN 4-Piperidinopropanoic acid,  $\beta$ -(3,3-difluorocyclopentyl)-1-[(1,1-dimethylethoxy)carbonyl]-, ethyl ester (9CI) (CA INDEX NAME)

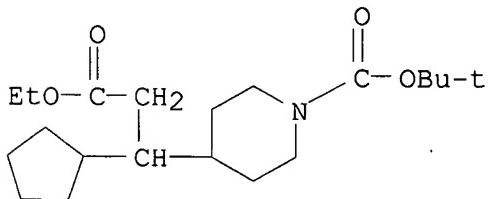


IT 876757-40-3

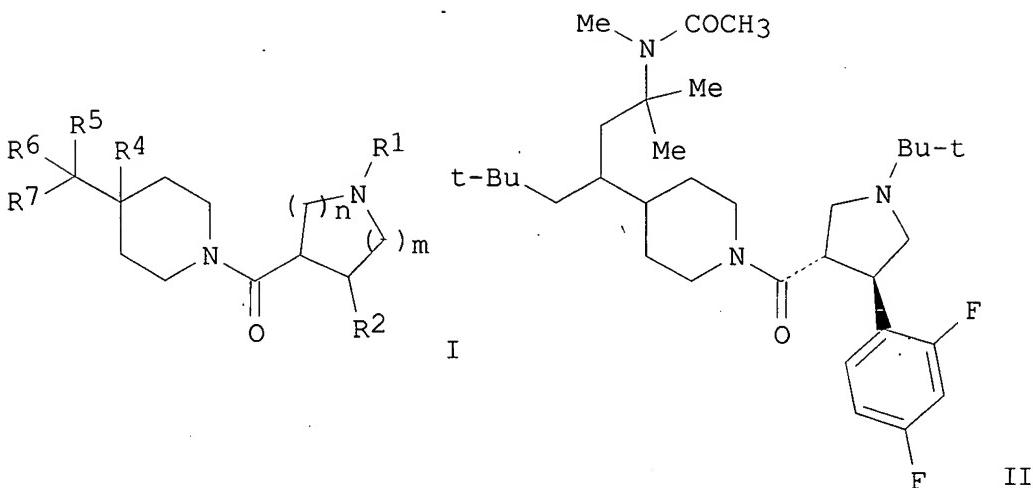
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of piperidine derivs. as MCR-4 agonists)

RN 876757-40-3 CAPLUS

CN 4-Piperidinepropanoic acid,  $\beta$ -cyclopentyl-1-[ $(1,1\text{-dimethylethoxy})$  carbonyl]-, ethyl ester (9CI) (CA INDEX NAME)



GI



AB The title piperidine derivs. I [wherein  $m = 0-2$ ;  $n = 1-2$ ;  $R^1 = H$ , amidino,

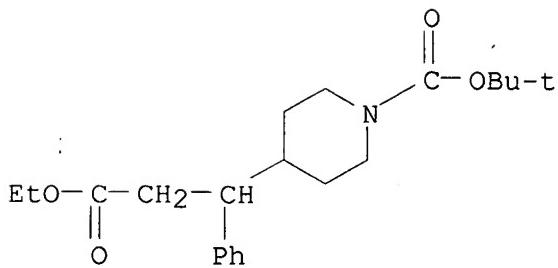
alkyl, etc.;  $R^2 = (\text{un})\text{substituted Ph, naphthyl, or heteroaryl}$ ;  $R^4 = H$ , alkyl, alkoxy, etc.;  $R^5 = \text{CF}_3$ , alkyl, alkenyl, alkynyl, etc.;  $R^6 = H$ , alkyl, or alkoxy;  $R^7 = \text{NH}_2$ , CN, OH, alkoxy, etc.], or pharmaceutically acceptable salts thereof were prepared as agonists of the human melanocortin-4 receptors (MCR-4). For example, II was prepared in a multi-step synthesis. The title compds. showed IC<sub>50</sub> less than 10  $\mu\text{M}$  against MCR-4. Formulations with finely divided lactose as hard gelatin

capsule have been described. The compds. are useful for the treatment, control, or prevention of diseases and disorders responsive to the activation of MCR-4, such as obesity, diabetes, male or female sexual dysfunction (no data).

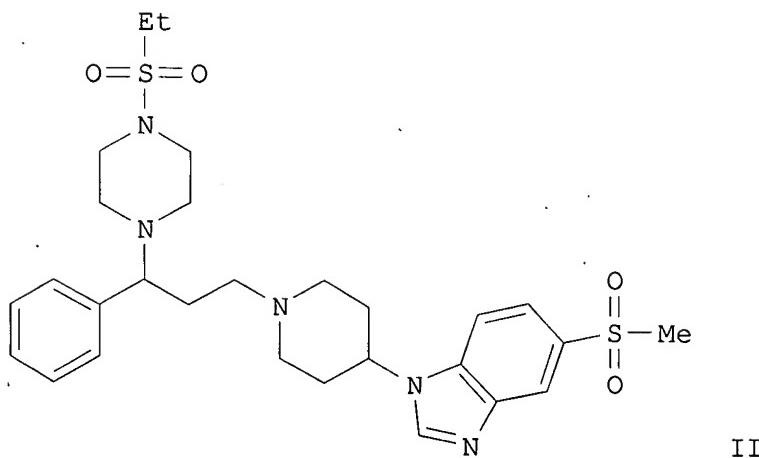
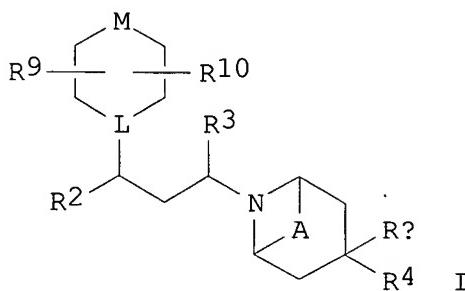
ACCESSION NUMBER: 2005:1171558 CAPLUS  
 DOCUMENT NUMBER: 143:440441  
 TITLE: Preparation of piperidine derivatives as  
 modulators of chemokine receptor CCR5  
 INVENTOR(S): Faull, Alan; Tucker, Howard  
 PATENT ASSIGNEE(S): Astrazeneca AB, Swed.  
 SOURCE: PCT Int. Appl., 122 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005101989	A2	20051103	WO 2005-SE574	20050420
WO 2005101989	A3	20060427		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2005235169	A1	20051103	AU 2005-235169	20050420
CA 2562417	A1	20051103	CA 2005-2562417	20050420
EP 1742934	A2	20070117	EP 2005-734934	20050420
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, LV, MK, YU				
PRIORITY APPLN. INFO.:			SE 2004-1057	A 20040423
			SE 2005-57	A 20050110
			WO 2005-SE574	W 20050420

OTHER SOURCE(S): CASREACT 143:440441; MARPAT 143:440441  
 IT 897037-75-1P  
 RACT RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
 (Reactant or reagent)  
 (preparation of piperidine derivs. as modulators of chemokine  
 receptor CCR5)  
 RN 897037-75-1 CAPLUS  
 CN 4-Piperidinopropanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]- $\beta$ -phenyl-, ethyl ester (9CI) (CA INDEX NAME)



GI



AB Title compds. represented by the formula I [wherein A = absent or (CH<sub>2</sub>)<sub>2</sub>;

L = CH or N; M = (un)substituted amino, O, SOn; n = 0-2; R<sup>2</sup> = (un)substituted Ph or (halo)thienyl; R<sup>3</sup> = H or Me; R<sup>b</sup> = H or alkyl; R<sup>4</sup>

= (un)substituted heterocycle; R<sup>9</sup>, R<sup>10</sup> = independently H or alkyl; and pharmaceutically acceptable salts thereof] were prepared as modulators of

chemokine receptor CCR5. For example, II was provided in a multi-step synthesis starting from the reaction of 5-(methylsulfonyl)-1-piperidin-4-yl-1H-benzimidazole with 3-chloropropiophenone. II inhibited binding of MIP-1 $\alpha$  to recombinant human CCR5 receptors expressed in membranes prepared from Chinese hamster ovary cells with a Pic50 of 6.0. Thus, I and their pharmaceutical compns. are useful for the treatment of CCR5-mediated diseases (no data).

L4 ANSWER 6 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:99468 CAPLUS  
 DOCUMENT NUMBER: 142:197888  
 TITLE: Preparation of piperidine derivatives as chemokine receptor modulators  
 INVENTOR(S): Brown, Dearg; Oldfield, John; Tucker, Howard  
 PATENT ASSIGNEE(S): AstraZeneca AB, Swed.  
 SOURCE: PCT Int. Appl., 75 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005009959	A1	20050203	WO 2004-SE1149	20040726
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1654229	A1	20060510	EP 2004-749185	20040726
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
JP 2007500694	T	20070118	JP 2006-521803	20040726
PRIORITY APPLN. INFO.:			SE 2003-2155	A 20030731
			SE 2004-1420	A 20040603
			WO 2004-SE1149	W 20040726

OTHER SOURCE(S): CASREACT 142:197888; MARPAT 142:197888  
 IT 718610-71-0P

10/782,060

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
RACT

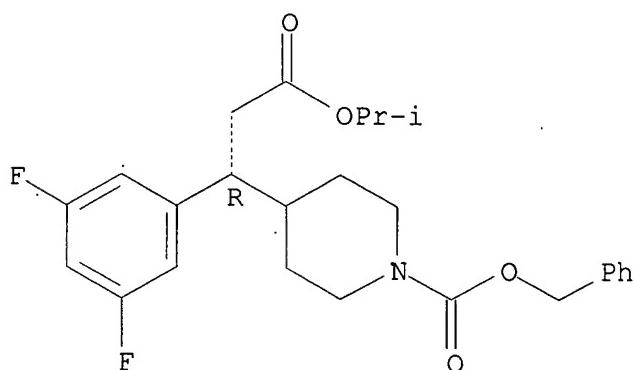
(Reactant or reagent)

(preparation of piperidine derivs. as chemokine receptor CCR5 modulators)

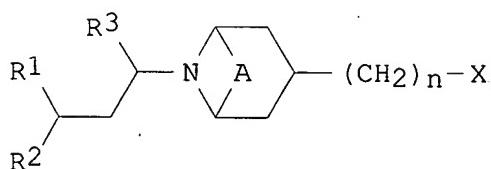
RN 718610-71-0 CAPLUS

CN 4-Piperidinopropanoic acid,  $\beta$ -(3,5-difluorophenyl)-1-[ (phenylmethoxy)carbonyl]-, 1-methylethyl ester, ( $\beta$ R)- (9CI) (CA INDEX NAME)

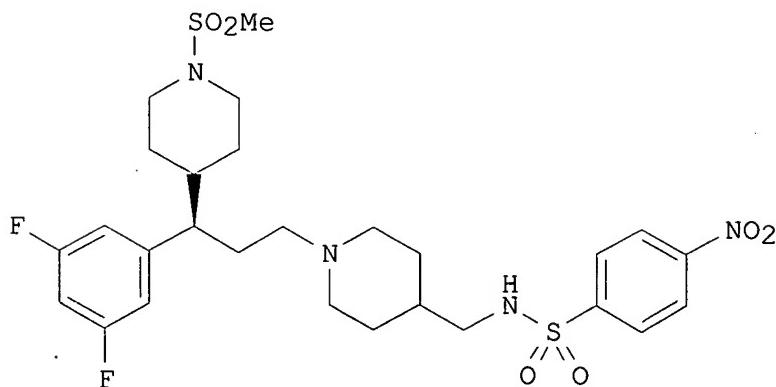
Absolute stereochemistry.



GI



I



II

AB Title compds. represented by the formula I [wherein A = absent or (CH<sub>2</sub>)<sub>2</sub>;  
 R<sub>1</sub> = (un)substituted carbonylamino, carbonylalkoxy, (hetero)aryl,  
 etc.; R<sub>2</sub>  
 = Ph, heteroaryl or cycloalkyl; R<sub>3</sub> = H or alkyl; X = SO<sub>2</sub>NR<sub>4</sub>R<sub>5</sub> or  
 NR<sub>6</sub>SO<sub>2</sub>R<sub>7</sub>;  
 R<sub>7</sub> = (hetero)aryl, (cyclo)alkyl, heterocyclyl or NR<sub>8</sub>R<sub>9</sub>; R<sub>4</sub>, R<sub>8</sub> =  
 (hetero)aryl, (cyclo)alkyl or heterocyclyl; R<sub>5</sub>, R<sub>6</sub>, R<sub>9</sub> = independently  
 H  
 or alkyl; or R<sub>8</sub>R<sub>9</sub> = (hetero)cyclic ring; n = 1-3; and pharmaceutically  
 acceptable salts or solvates thereof] were prepared as modulators of  
 chemokine receptor. For example, II was given in a multi-step.  
 synthesis  
 starting from the reaction of N-benzyloxycarbonyl-4-formylpiperidine  
 with  
 malonic acid. II showed inhibition of human CCR5 receptor with a Pic50  
 value of 8.1. Thus, I and their pharmaceutical compns. are useful for  
 the  
 treatment of CCR5 mediated diseases (no data).  
 REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR  
 THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L4 ANSWER 7 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:964831 CAPLUS  
 DOCUMENT NUMBER: 141:410944  
 TITLE: Preparation of piperidinyl targeting compounds that  
 selectively bind integrins  
 INVENTOR(S): De Corte. Bart; Kinney, William A.; Maryanoff,  
 Bruce  
 PATENT ASSIGNEE(S): E.; Ghosh, Shyamali; Liu, Li  
 USA  
 SOURCE: U.S. Pat. Appl. Publ., 160 pp., Cont.-in-part of  
 U.S.  
 Ser. No. 641,964.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004224986	A1	20041111	US 2004-782060	20040218
US 2004077684	A1	20040422	US 2003-641964	20030815
AU 2004316476	A1	20050909	AU 2004-316476	20040329
CA 2556768	A1	20050909	CA 2004-2556768	20040329
WO 2005082889	A1	20050909	WO 2004-US9465	20040329
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,				

GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
 LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,  
 NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,  
 TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,  
 BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
 ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,  
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 TD, TG

EP 1718635 A1 20061108 EP 2004-749482 20040329

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK

NO 2006004212 A 20061115 NO 2006-4212 20060918

PRIORITY APPLN. INFO.: US 2002-404239P P 20020816

US 2003-641964 A2 20030815

US 2004-782060 A 20040218

WO 2004-US9465 W 20040329

OTHER SOURCE(S): MARPAT 141:410944

IT 669076-68-0P 669076-69-1P

RL: PAC (Pharmacological activity); PUR (Purification or recovery); SPN  
 (Synthetic preparation); THU (Therapeutic use); BIOL (Biological  
 study);

PREP (Preparation); USES (Uses)

(preparation of piperidinealkanoic acids as cell targeting compds.

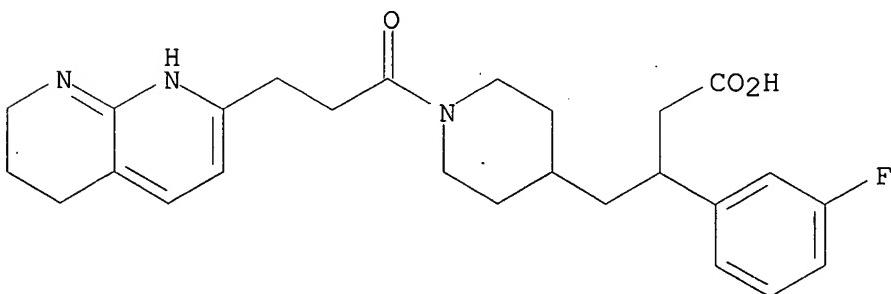
with

selective affinity to  $\alpha v\beta 3$ ,  $\alpha v\beta 5$ , or  
 $\alpha v\beta 6$  integrin receptors for use with imaging agents or  
 liposomes)

RN 669076-68-0 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(3-fluorophenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, (+)- (9CI) (CA INDEX NAME)

Rotation (+).

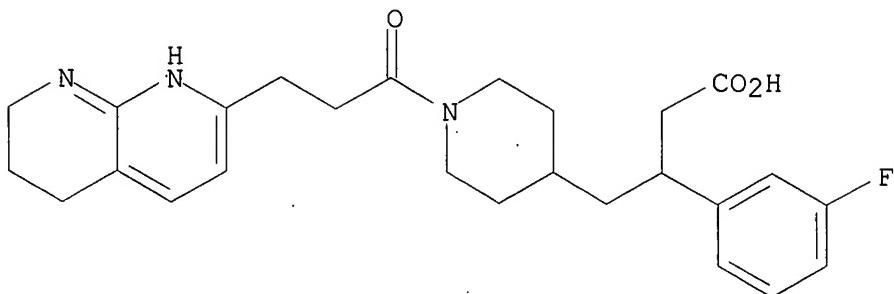


RN 669076-69-1 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(3-fluorophenyl)-1-[1-oxo-3-(1,5,6,7-

tetrahydro-1,8-naphthyridin-2-yl)propyl]-, (-)- (9CI) (CA INDEX NAME)

Rotation (-).



IT 669076-37-3P 791821-34-6P 791821-35-7P  
791821-41-5P

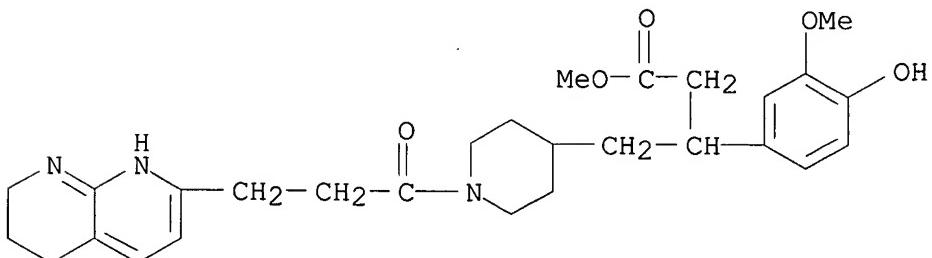
RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(preparation of piperidinealkanoic acids as cell targeting compds.

with

selective affinity to  $\alpha\beta 3$ ,  $\alpha\beta 5$ , or  
 $\alpha\beta 6$  integrin receptors for use with imaging agents or  
liposomes)

RN 669076-37-3 CAPLUS

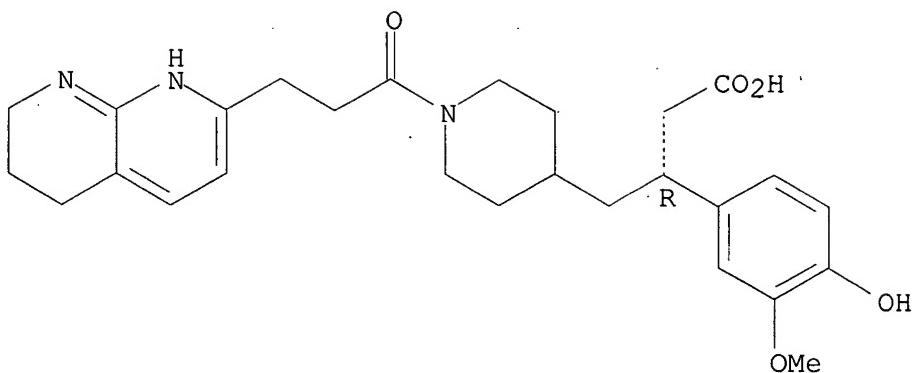
CN 4-Piperidinebutanoic acid,  $\beta$ -(4-hydroxy-3-methoxyphenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, methyl ester (9CI)  
(CA INDEX NAME)



RN 791821-34-6 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(4-hydroxy-3-methoxyphenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, ( $\beta R$ )- (9CI) (CA INDEX NAME)

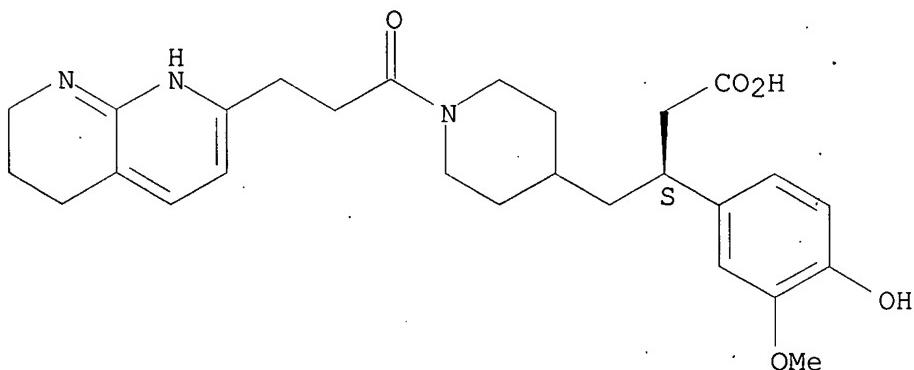
Absolute stereochemistry.



RN 791821-35-7 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(4-hydroxy-3-methoxyphenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, ( $\beta$ S)- (9CI) (CA INDEX NAME)

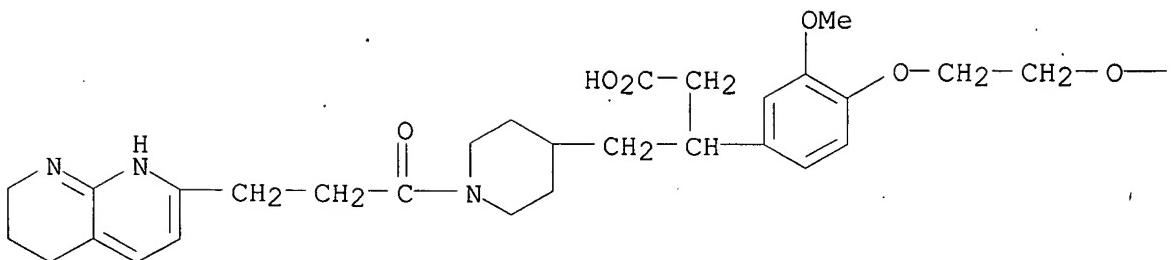
Absolute stereochemistry.



RN 791821-41-5 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -[4-[2-[2-(2-mercptoethoxy)ethoxy]-3-methoxyphenyl]-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

— CH<sub>2</sub>—CH<sub>2</sub>—O—CH<sub>2</sub>—CH<sub>2</sub>—SH

IT    669074-97-9P 669075-00-7P 669075-01-8P  
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 669075-10-9P 669075-11-0P 669075-12-1P  
 669075-17-6P 669075-19-8P 669075-21-2P  
 669075-22-3P 669075-24-5P 669075-27-8P  
 669075-28-9P 669075-29-0P 669075-30-3P  
 669075-31-4P 669075-38-1P 669075-39-2P  
 669075-41-6P 669075-48-3P 669075-49-4P  
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 791821-43-7P 791821-44-8P 791821-45-9P  
 792931-34-1P 792931-35-2P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of piperidinealkanoic acids as cell targeting compds.

with

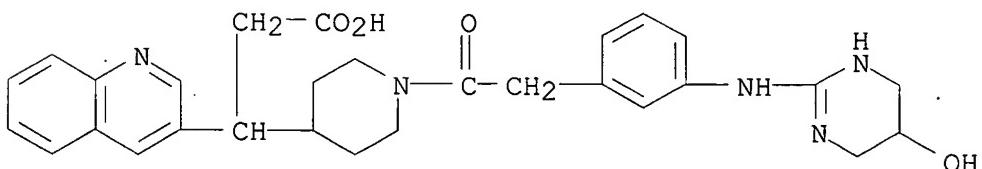
selective affinity to  $\alpha\beta 3$ ,  $\alpha\beta 5$ , or

10/782,060

$\alpha\beta 6$  integrin receptors for use with imaging agents or liposomes)

RN 669074-97-9 CAPLUS

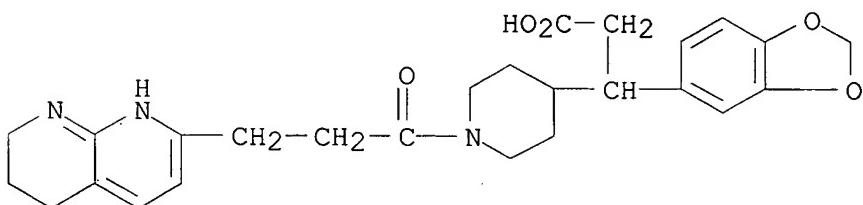
CN 3-Quinolinepropanoic acid,  $\beta$ -[1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]phenyl]acetyl]-4-piperidinyl-, monohydrochloride  
(9CI)  
(CA INDEX NAME)



● HCl

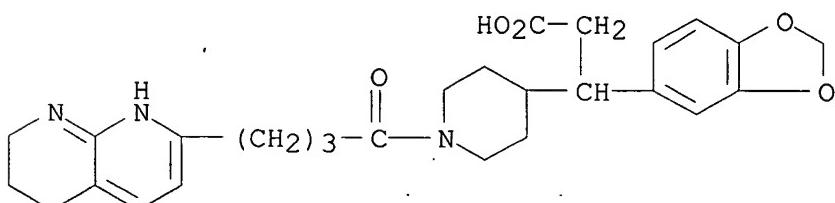
RN 669075-00-7 CAPLUS

CN 4-Piperidinopropanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



RN 669075-01-8 CAPLUS

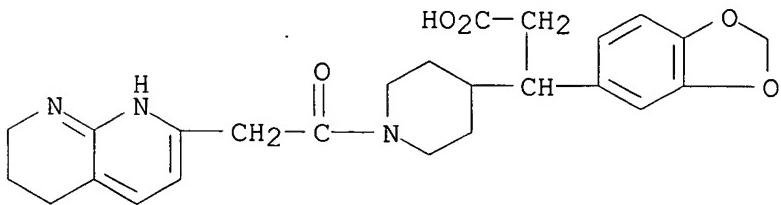
CN 4-Piperidinopropanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]- (9CI) (CA INDEX NAME)



RN 669075-02-9 CAPLUS

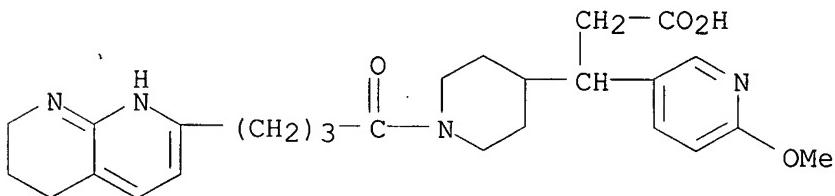
10/782,060

CN 4-Piperidinopropanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)acetyl]- (9CI) (CA INDEX NAME)



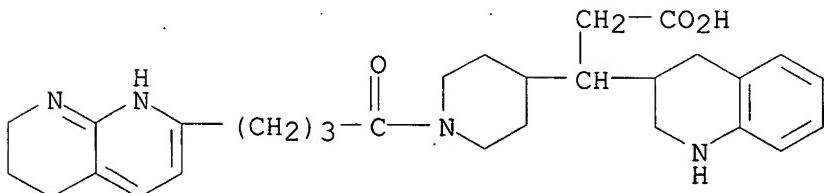
RN 669075-03-0 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy- $\beta$ -[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]- (9CI) (CA INDEX NAME)



RN 669075-04-1 CAPLUS

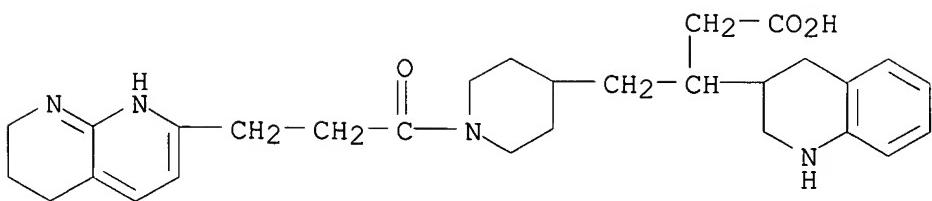
CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro- $\beta$ -[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]-, monohydrochloride  
(9CI) (CA INDEX NAME)



● HCl

RN 669075-10-9 CAPLUS

CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI)  
(CA INDEX NAME)

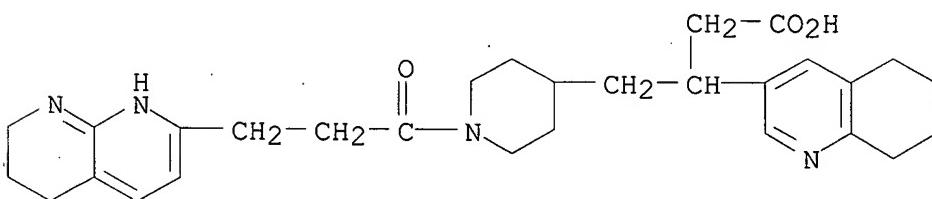


RN 669075-11-0 CAPLUS

CN 3-Quinolinopropanoic acid, 5,6,7,8-tetrahydro- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI)

(CA

INDEX NAME)

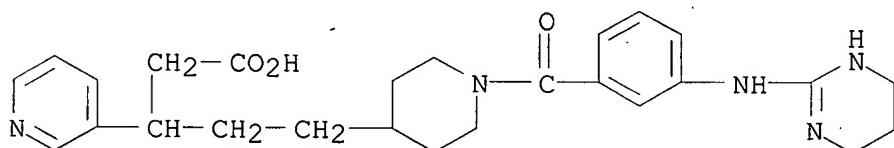


RN 669075-12-1 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[3-[(1,4,5,6-tetrahydro-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]-, monohydrochloride

(9CI)

(CA INDEX NAME)

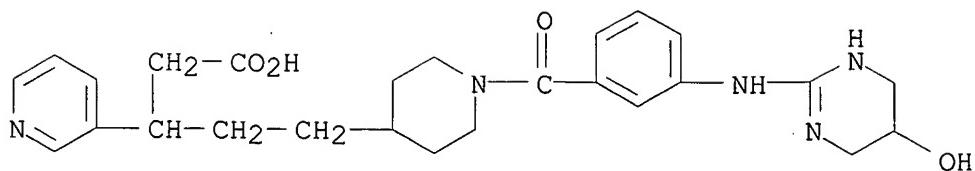


● HCl

RN 669075-17-6 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)

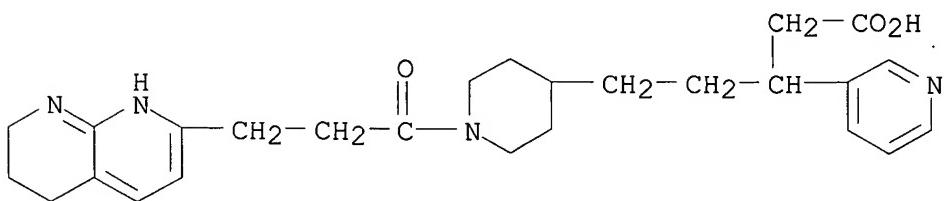
10/782,060



RN 669075-19-8 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]ethyl]-, monohydrochloride  
(9CI)

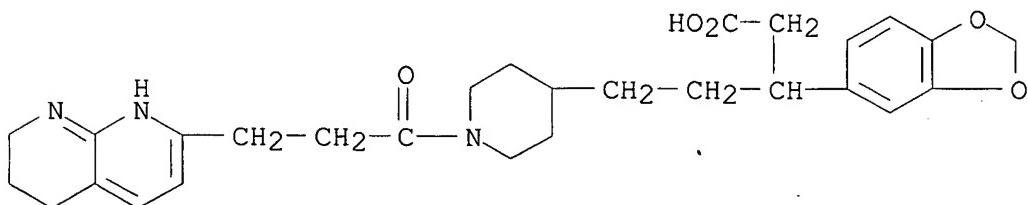
(CA INDEX NAME)



● HCl

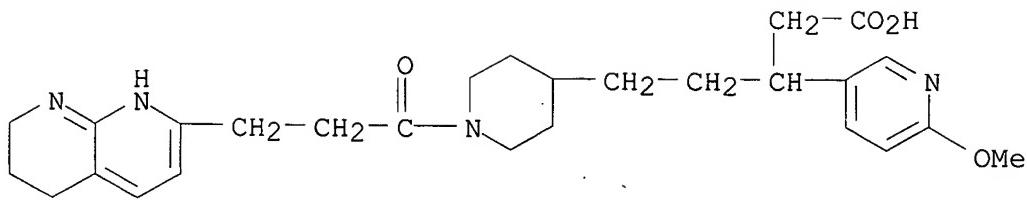
RN 669075-21-2 CAPLUS

CN 4-Piperidinepentanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX  
NAME)



RN 669075-22-3 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy- $\beta$ -[2-[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]ethyl]- (9CI)  
(CA  
INDEX NAME)



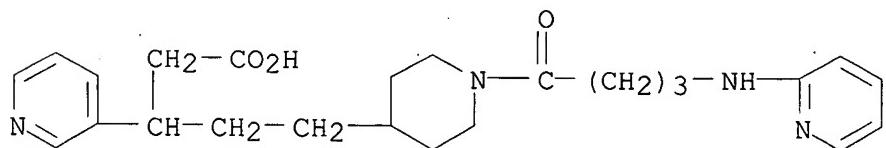
RN 669075-24-5 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[1-oxo-4-(2-pyridinylamino)butyl]-4-piperidinyl]ethyl]-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 669075-23-4

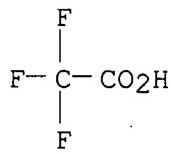
CMF C24 H32 N4 O3



CM 2

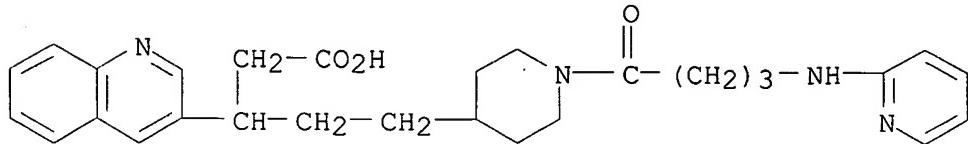
CRN 76-05-1

CMF C2 H F3 O2



RN 669075-27-8 CAPLUS

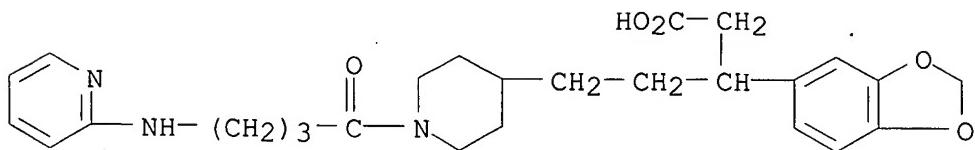
CN 3-Quinolinepropanoic acid,  $\beta$ -[2-[1-[1-oxo-4-(2-pyridinylamino)butyl]-4-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



10/782,060

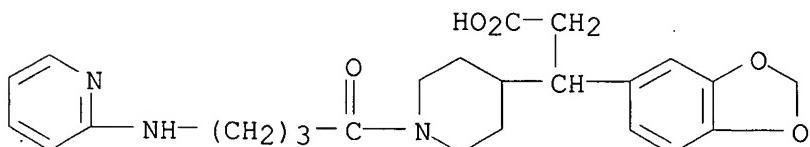
RN 669075-28-9 CAPLUS

CN 4-Piperidinpentanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-4-(2-pyridinylamino)butyl]- (9CI) (CA INDEX NAME)



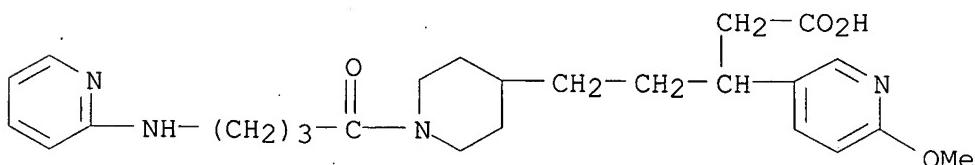
RN 669075-29-0 CAPLUS

CN 4-Piperidinopropanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-4-(2-pyridinylamino)butyl]- (9CI) (CA INDEX NAME)



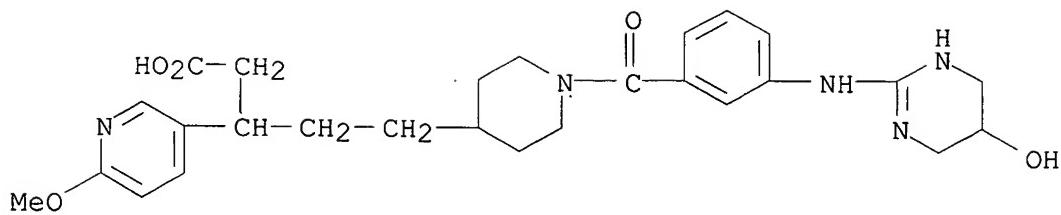
RN 669075-30-3 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy- $\beta$ -[2-[1-[1-oxo-4-(2-pyridinylamino)butyl]-4-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



RN 669075-31-4 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy- $\beta$ -[2-[1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]-, monohydrochloride (9CI) (CA INDEX NAME)

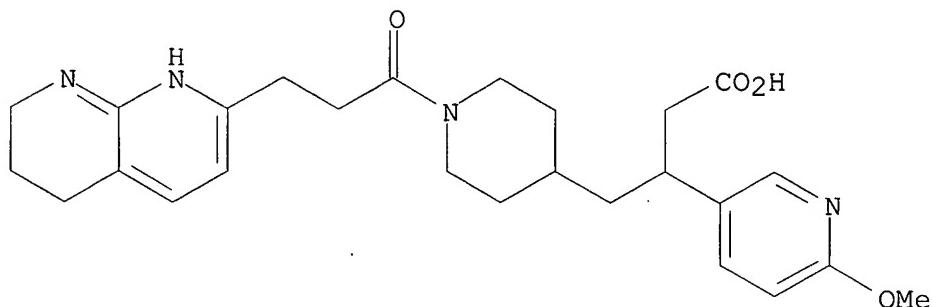


● HCl

RN 669075-38-1 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-, (+)-(9CI) (CA INDEX NAME)

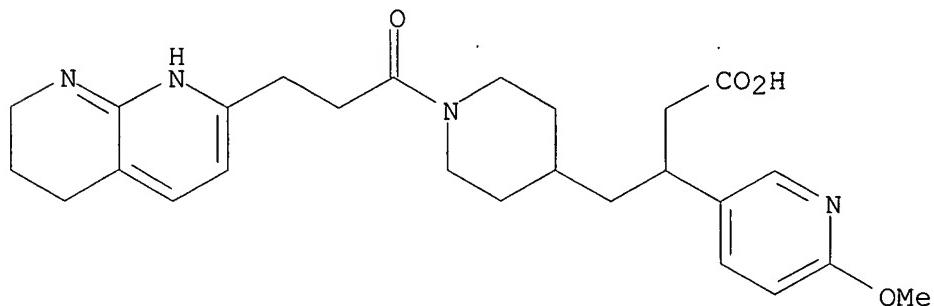
Rotation (+).



RN 669075-39-2 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-, (-)-(9CI) (CA INDEX NAME)

Rotation (-).



10/782,060

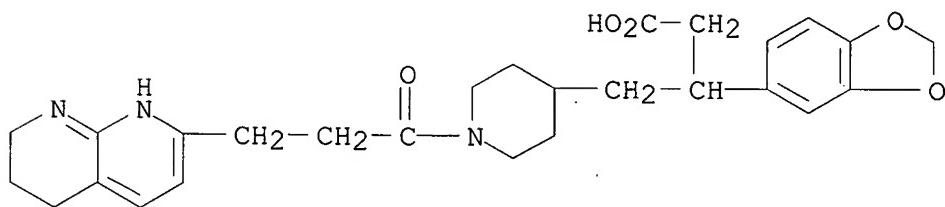
RN 669075-41-6 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-3-(5,6,7,8-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 669075-40-5

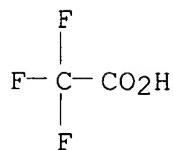
CMF C27 H33 N3 O5



CM 2

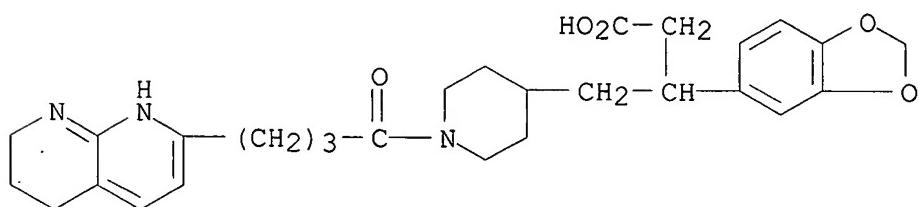
CRN 76-05-1

CMF C2 H F3 O2



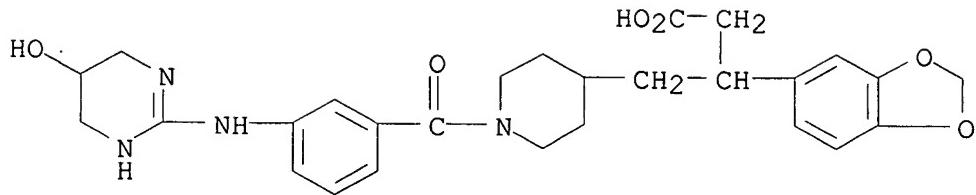
RN 669075-48-3 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]- (9CI) (CA INDEX NAME)



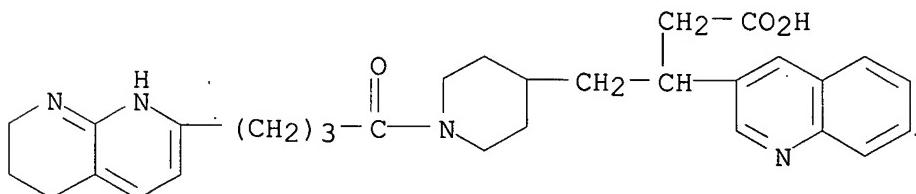
RN 669075-49-4 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]benzoyl]- (9CI) (CA INDEX NAME)



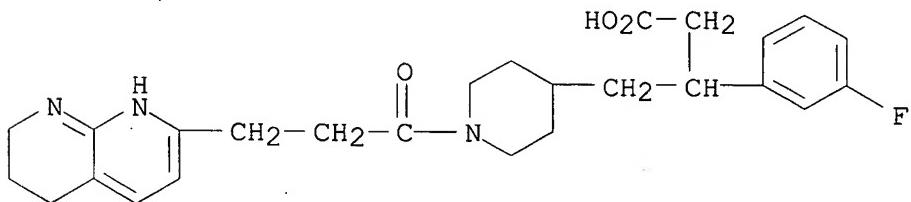
RN 669075-50-7 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]methyl]- (9CI) (CA INDEX NAME)



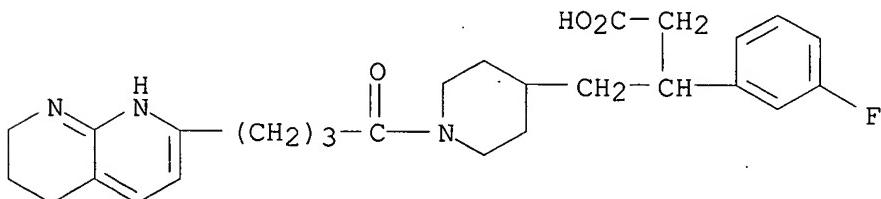
RN 669075-51-8 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(3-fluorophenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



RN 669075-52-9 CAPLUS

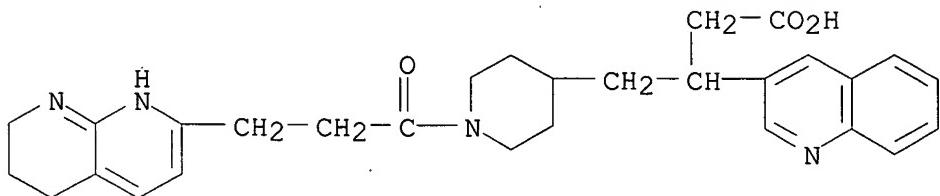
CN 4-Piperidinebutanoic acid,  $\beta$ -(3-fluorophenyl)-1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]- (9CI) (CA INDEX NAME)



RN 669075-53-0 CAPLUS

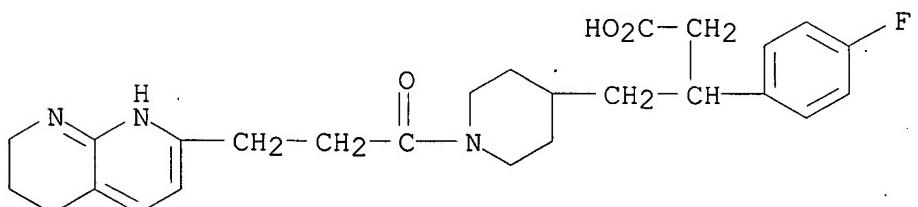
10/782,060

CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI) (CA INDEX NAME)



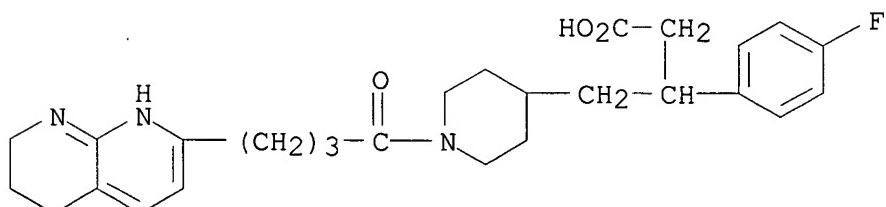
RN 669075-54-1 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(4-fluorophenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



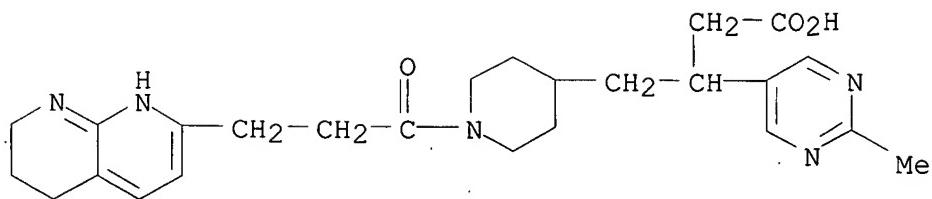
RN 669075-55-2 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(4-fluorophenyl)-1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]- (9CI) (CA INDEX NAME)



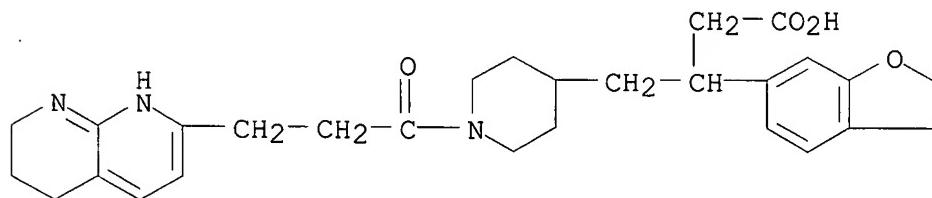
RN 669075-56-3 CAPLUS

CN 5-Pyrimidinepropanoic acid, 2-methyl- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI)  
(CA INDEX NAME)



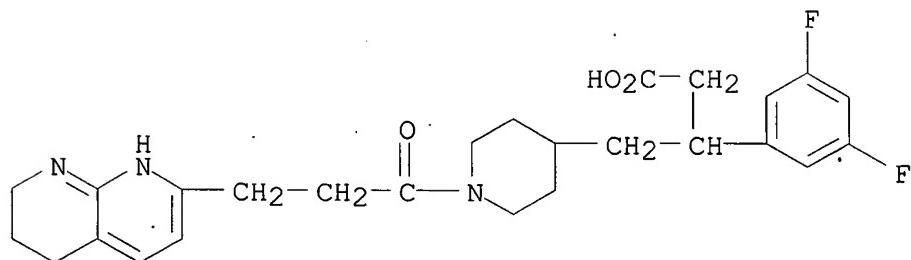
RN 669075-57-4 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(2,3-dihydro-6-benzofuranyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



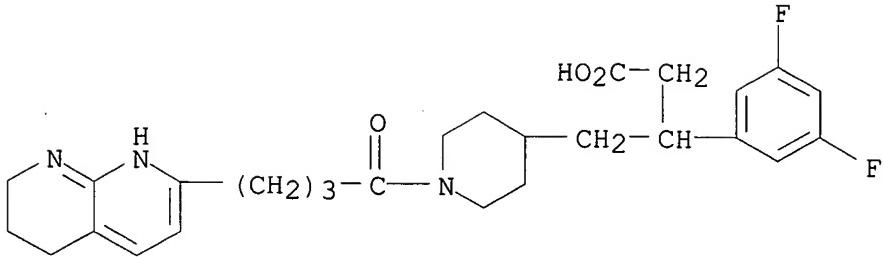
RN 669075-58-5 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(3,5-difluorophenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)

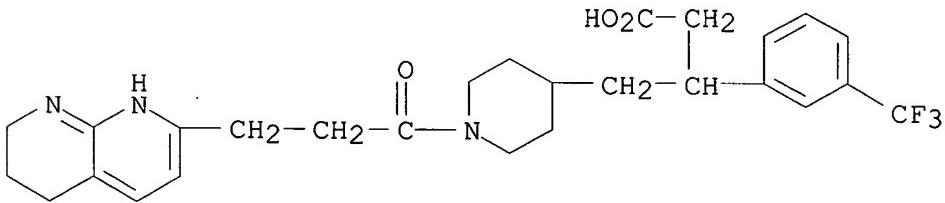


RN 669075-59-6 CAPLUS

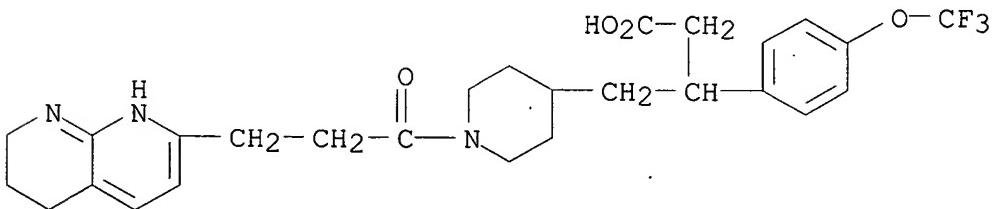
CN 4-Piperidinebutanoic acid,  $\beta$ -(3,5-difluorophenyl)-1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]- (9CI) (CA INDEX NAME)



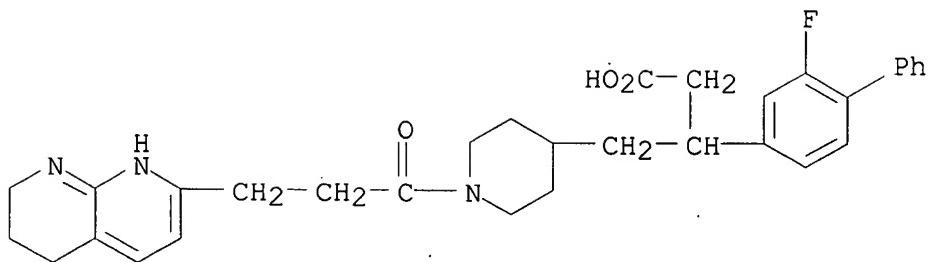
RN 669075-60-9 CAPLUS  
CN 4-Piperidinebutanoic acid,  
1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-  
2-yl)propyl]-β-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



RN 669075-61-0 CAPLUS  
CN 4-Piperidinebutanoic acid,  
1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-  
2-yl)propyl]-β-[4-(trifluoromethoxy)phenyl]- (9CI) (CA INDEX NAME)

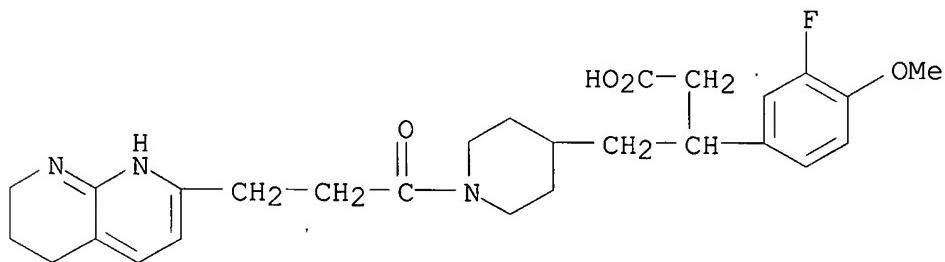


RN 669075-62-1 CAPLUS  
CN 4-Piperidinebutanoic acid, β-(2-fluoro[1,1'-biphenyl]-4-yl)-1-[1-oxo-  
3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX  
NAME)



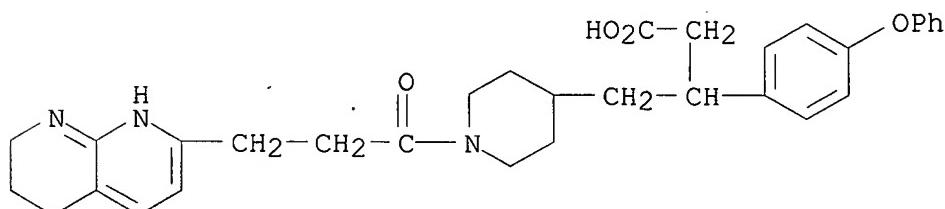
RN 669075-63-2 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(3-fluoro-4-methoxyphenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



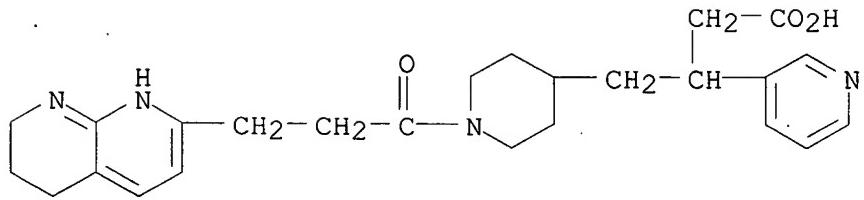
RN 669075-64-3 CAPLUS

CN 4-Piperidinebutanoic acid,  
1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-  
2-yl)propyl]- $\beta$ -(4-phenoxyphenyl)- (9CI) (CA INDEX NAME)



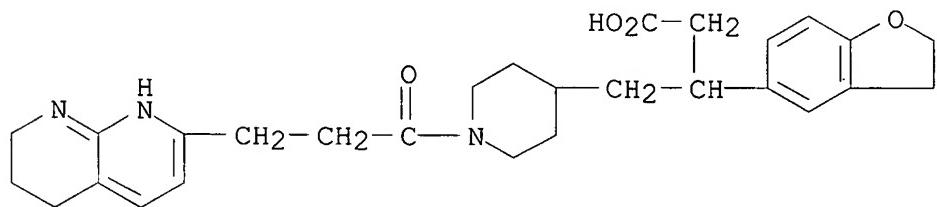
RN 669075-66-5 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]methyl]-4-piperidinyl]methyl- (9CI) (CA INDEX NAME)



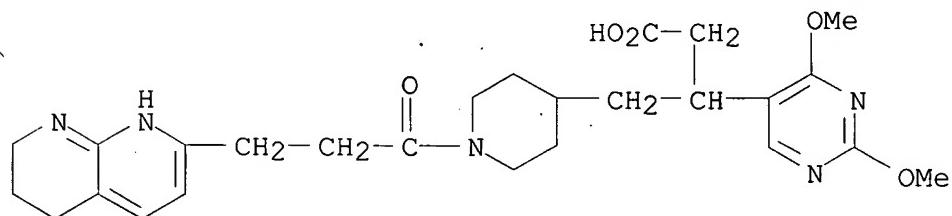
RN 669075-67-6 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(2,3-dihydro-5-benzofuranyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



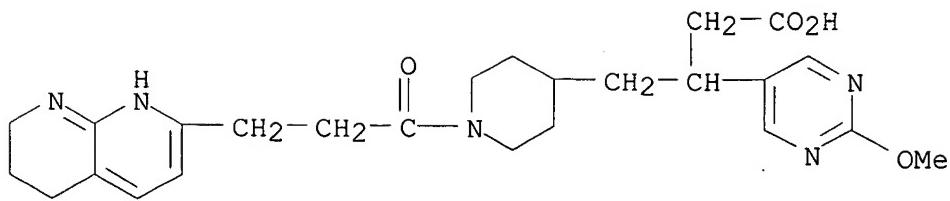
RN 669075-68-7 CAPLUS

CN 5-Pyrimidinepropanoic acid, 2,4-dimethoxy- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI)  
(CA INDEX NAME)



RN 669075-69-8 CAPLUS

CN 5-Pyrimidinepropanoic acid, 2-methoxy- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI)  
(CA INDEX NAME)



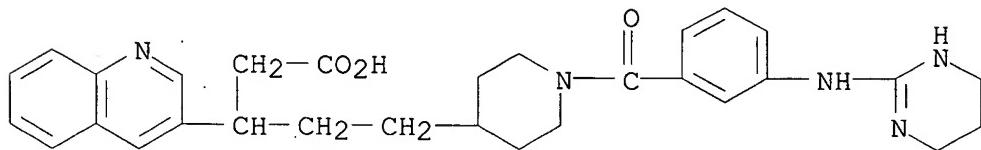
RN 669075-71-2 CAPLUS

CN 3-Quinolinopropanoic acid,  $\beta$ -[2-[1-[3-[(1,4,5,6-tetrahydro-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]-, mono(trifluoroacetate)  
(9CI) (CA INDEX NAME)

CM 1

CRN 669075-70-1

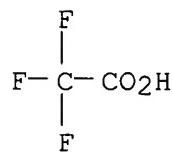
CMF C30 H35 N5 O3



CM 2

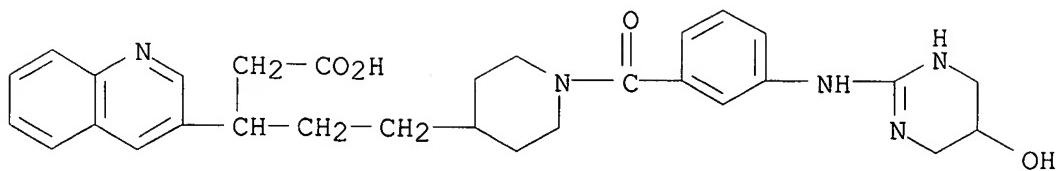
CRN 76-05-1

CMF C2 H F3 O2



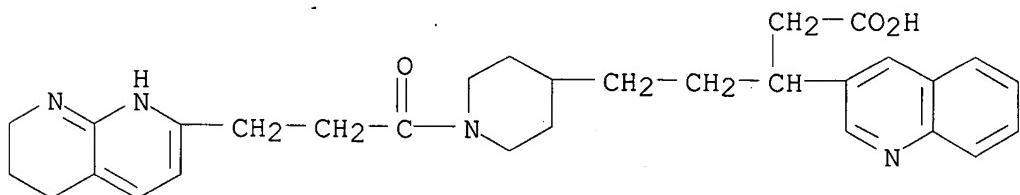
RN 669075-80-3 CAPLUS

CN 3-Quinolinopropanoic acid,  $\beta$ -[2-[1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



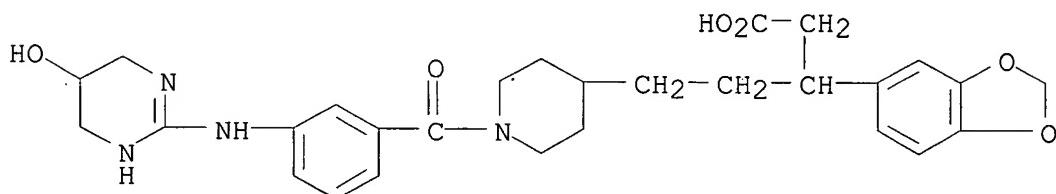
RN 669075-81-4 CAPLUS

CN 3-Quinolinopropanoic acid,  $\beta$ -[2-[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



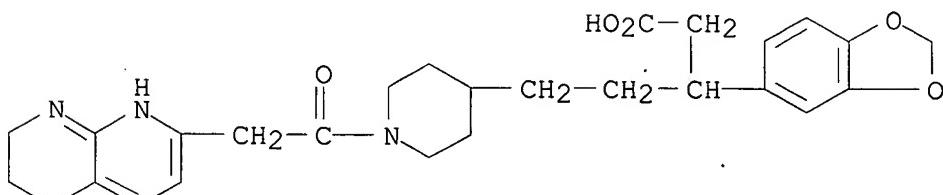
RN 669075-83-6 CAPLUS

CN 4-Piperidinepentanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]benzoyl]- (9CI) (CA INDEX NAME)



RN 669075-84-7 CAPLUS

CN 4-Piperidinepentanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)acetyl]- (9CI) (CA INDEX NAME)



RN 669075-86-9 CAPLUS

CN 4-Piperidinebutanoic acid,  
1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-

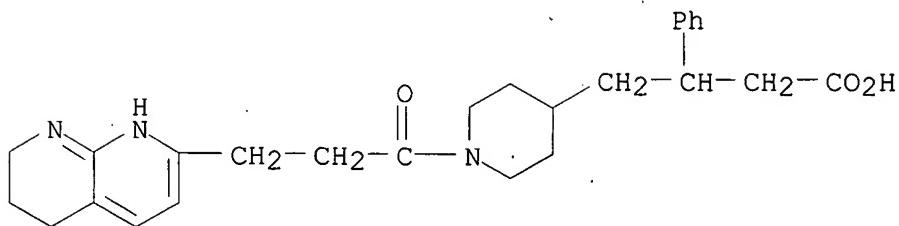
10/782,060

2-yl)propyl]- $\beta$ -phenyl-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 669075-85-8

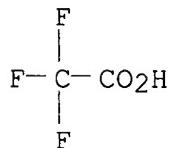
CMF C26 H33 N3 O3



CM 2

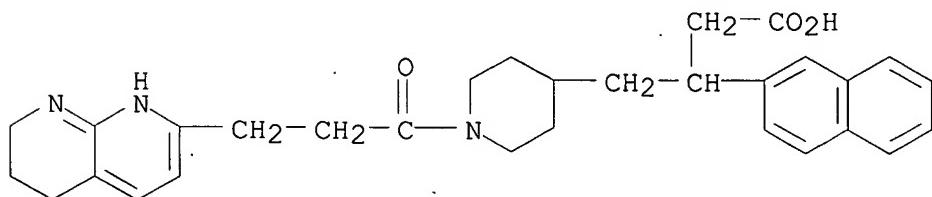
CRN 76-05-1

CMF C2 H F3 O2



RN 669075-93-8 CAPLUS

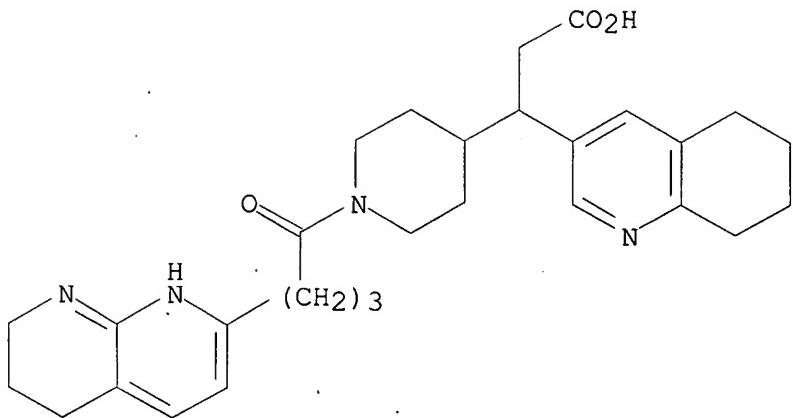
CN 4-Piperidinebutanoic acid,  $\beta$ -2-naphthalenyl-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



RN 669076-05-5 CAPLUS

CN 3-Quinolinepropanoic acid, 5,6,7,8-tetrahydro- $\beta$ -[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]-, (+)- (9CI) (CA INDEX NAME)

Rotation (+).



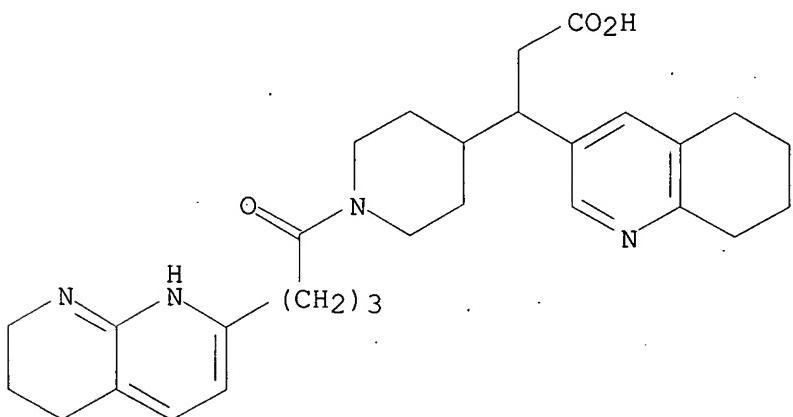
RN 669076-06-6 CAPLUS

CN 3-Quinolinepropanoic acid, 5,6,7,8-tetrahydro- $\beta$ -[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]-, (-) (9CI)

(CA

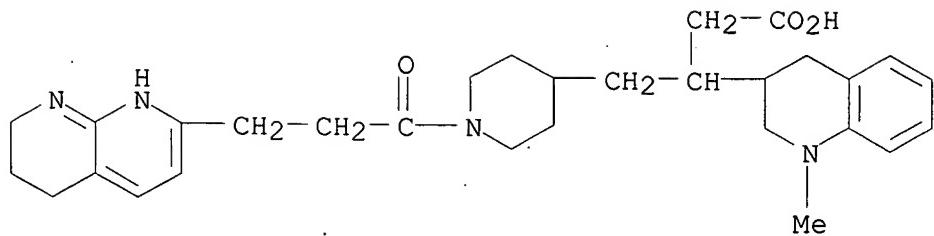
INDEX NAME)

Rotation (-).



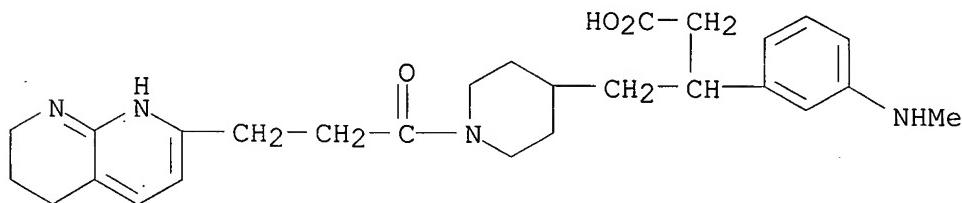
RN 669076-08-8 CAPLUS

CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro-1-methyl- $\beta$ -[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI) (CA INDEX NAME)



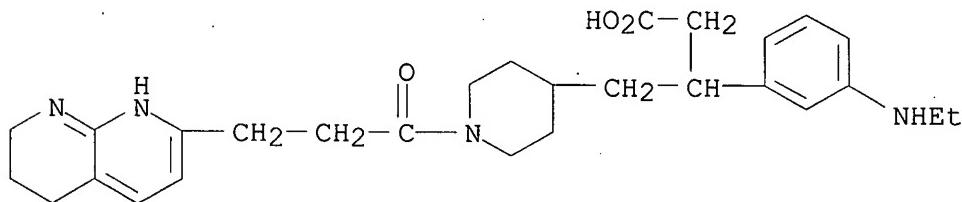
RN 669076-38-4 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -[3-(methylamino)phenyl]-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



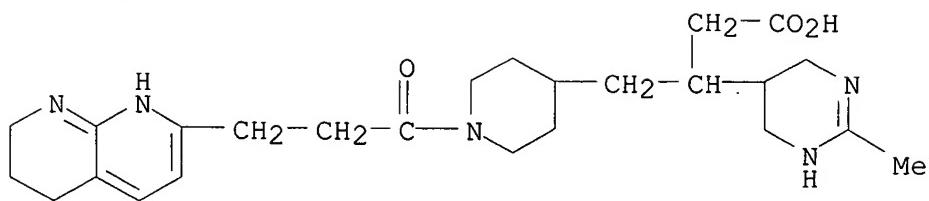
RN 669076-45-3 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -[3-(ethylamino)phenyl]-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



RN 669076-84-0 CAPLUS

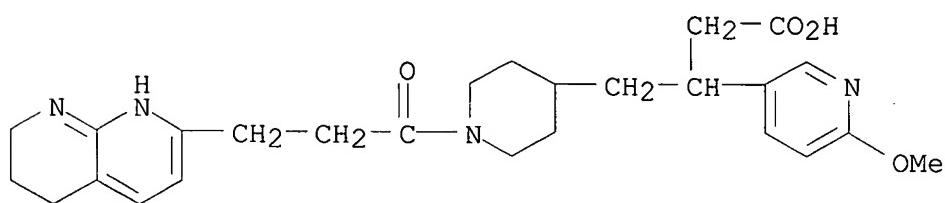
CN 5-Pyrimidinepropanoic acid, 1,4,5,6-tetrahydro-2-methyl- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-(9CI) (CA INDEX NAME)



RN 669076-86-2 CAPLUS

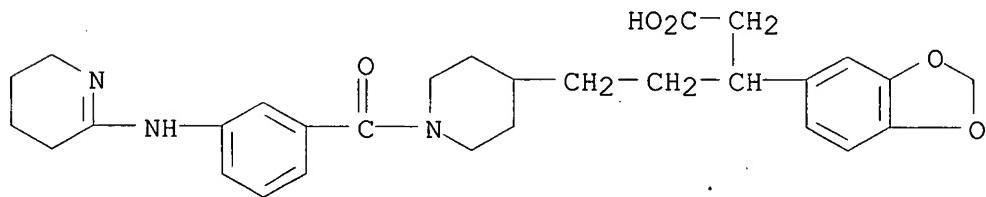
CN 3-Pyridinepropanoic acid, 6-methoxy-β-[ [1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI)

(CA INDEX NAME)



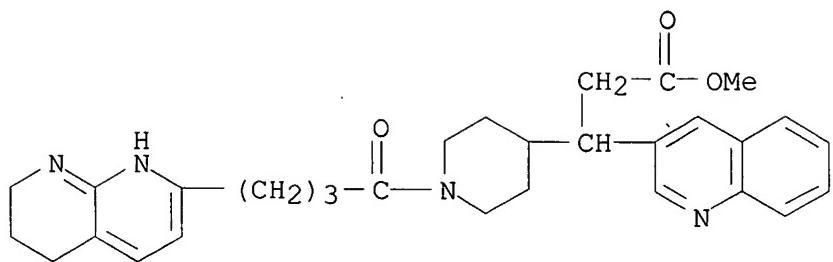
RN 669076-87-3 CAPLUS

CN 4-Piperidepentanoic acid, β-1,3-benzodioxol-5-yl-1-[3-[ (3,4,5,6-tetrahydro-2-pyridinyl)amino]benzoyl]- (9CI) (CA INDEX NAME)



RN 791820-70-7 CAPLUS

CN 3-Quinolinepropanoic acid, β-[ [1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]methyl ester, hydrochloride (2:7) (9CI) (CA INDEX NAME)

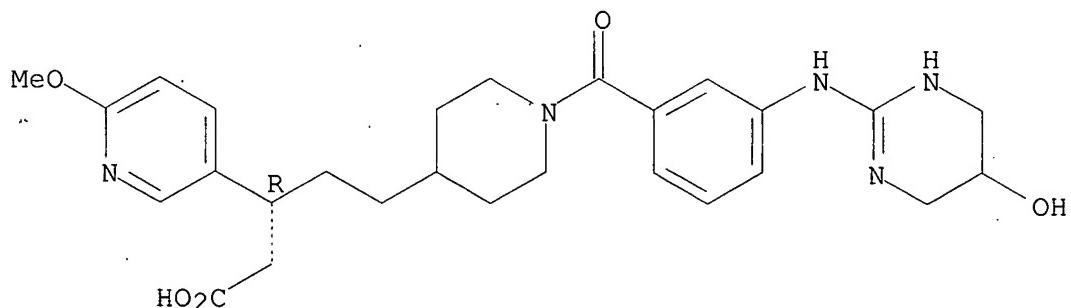


● 7/2 HCl

RN 791820-74-1 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy-β-[2-[1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]-, monohydrochloride, (βR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

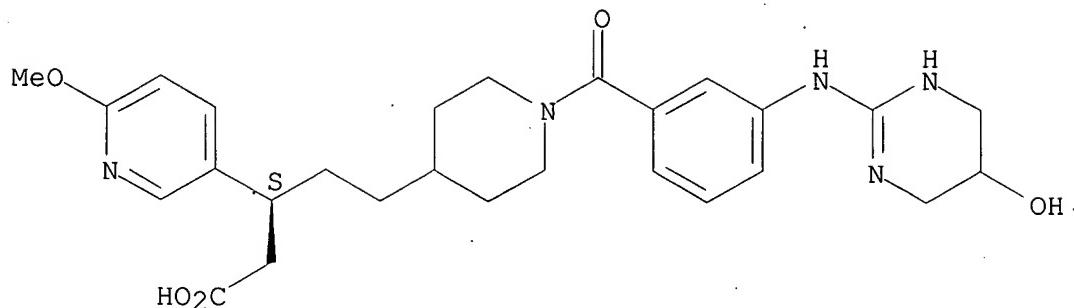


● HCl

RN 791820-75-2 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy-β-[2-[1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]-, monohydrochloride, (βS)- (9CI) (CA INDEX NAME)

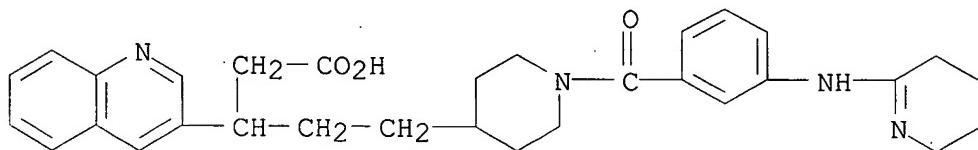
Absolute stereochemistry.



● HCl

RN 791820-80-9 CAPLUS

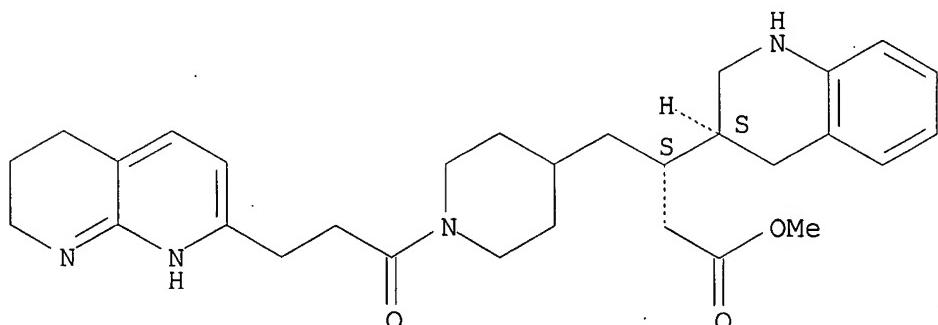
CN 3-Quinolinepropanoic acid,  $\beta$ -[2-[1-[3-[(3,4,5,6-tetrahydro-2-pyridinyl)amino]benzoyl]-4-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



RN 791820-81-0 CAPLUS

CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-, methyl ester, ( $\beta$ S,3S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



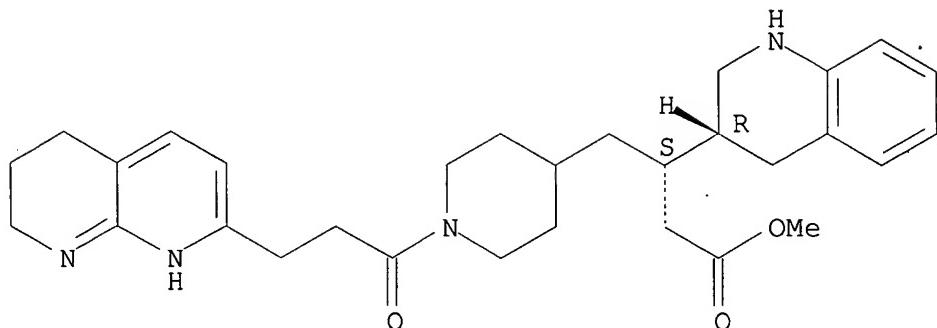
RN 791820-82-1 CAPLUS

CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-, methyl

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ester, ( $\beta$ S,3R)- (9CI) (CA INDEX NAME)

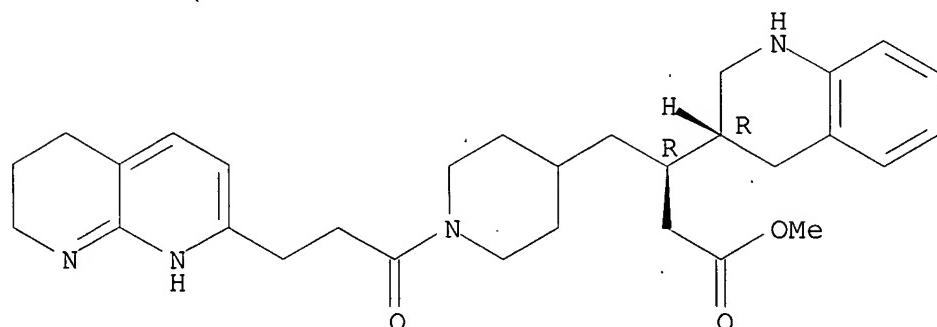
Absolute stereochemistry.



RN 791820-83-2 CAPLUS

CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-, methyl ester, ( $\beta$ R,3R)- (9CI) (CA INDEX NAME)

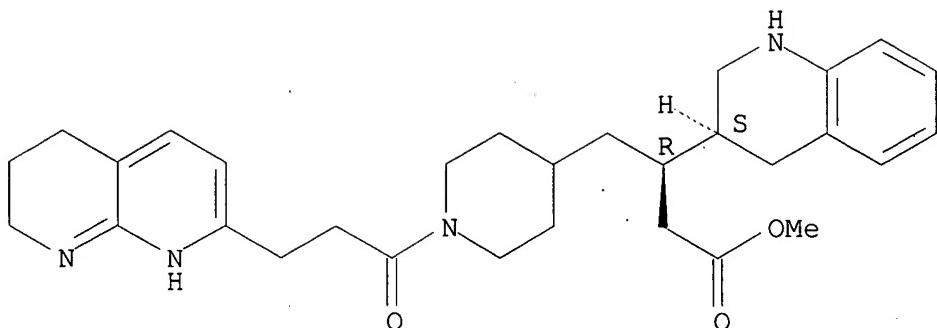
Absolute stereochemistry.



RN 791820-84-3 CAPLUS

CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-, methyl ester, ( $\beta$ R,3S)- (9CI) (CA INDEX NAME)

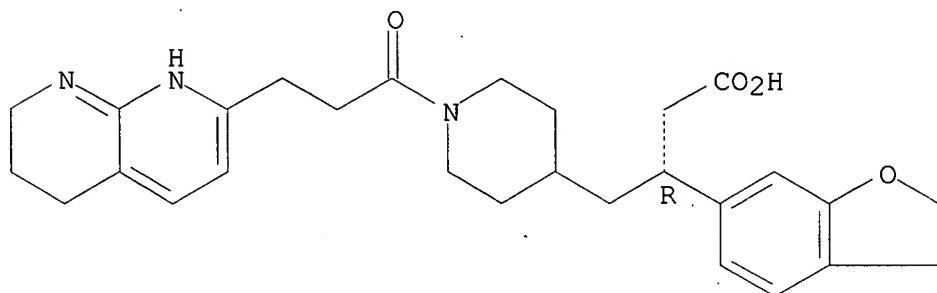
Absolute stereochemistry.



RN 791820-93-4 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(2,3-dihydro-6-benzofuranyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, ( $\beta$ R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 791820-94-5 CAPLUS

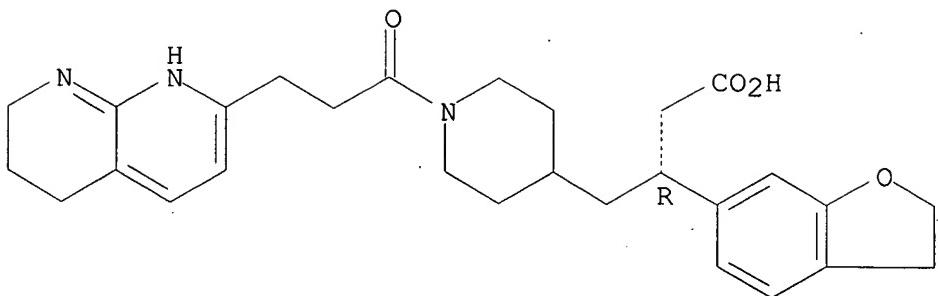
CN 4-Piperidinebutanoic acid,  $\beta$ -(2,3-dihydro-6-benzofuranyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, ( $\beta$ R)-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 791820-93-4

CMF C28 H35 N3 O4

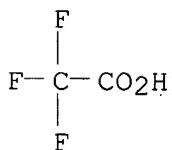
Absolute stereochemistry..



CM 2

CRN 76-05-1

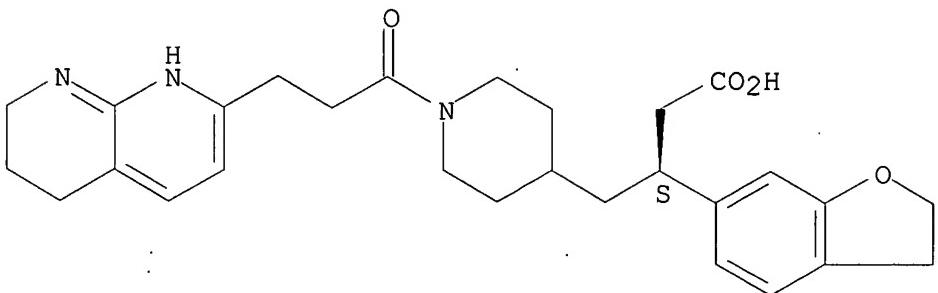
CMF C2 H F3 O2



RN 791820-95-6 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(2,3-dihydro-6-benzofuranyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, ( $\beta$ S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 791820-96-7 CAPLUS

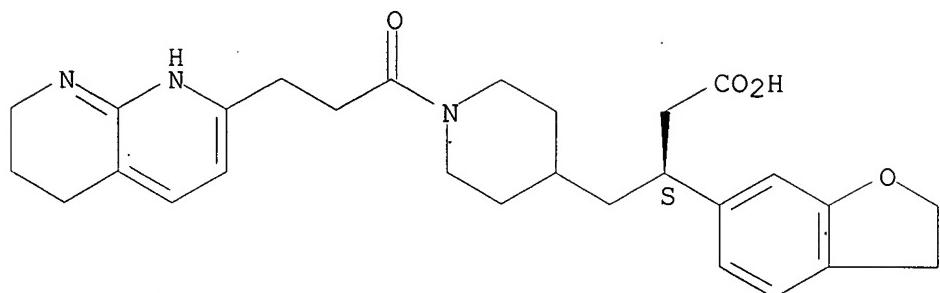
CN 4-Piperidinebutanoic acid,  $\beta$ -(2,3-dihydro-6-benzofuranyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, ( $\beta$ S)-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

10/782,060

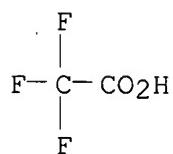
CRN 791820-95-6  
CMF C28 H35 N3 O4

Absolute stereochemistry.

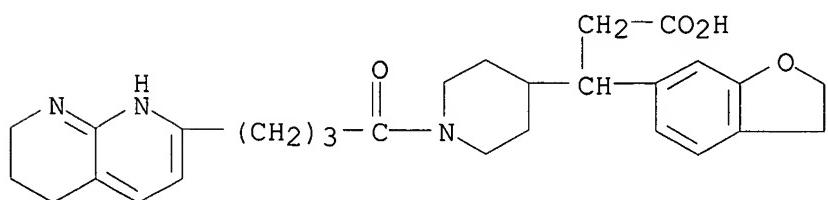


CM 2

CRN 76-05-1  
CMF C2 H F3 O2



RN 791821-24-4 CAPLUS  
CN 4-Piperidinopropanoic acid,  $\beta$ -(2,3-dihydro-6-benzofuranyl)-1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-, monohydrochloride  
(9CI)  
(CA INDEX NAME)



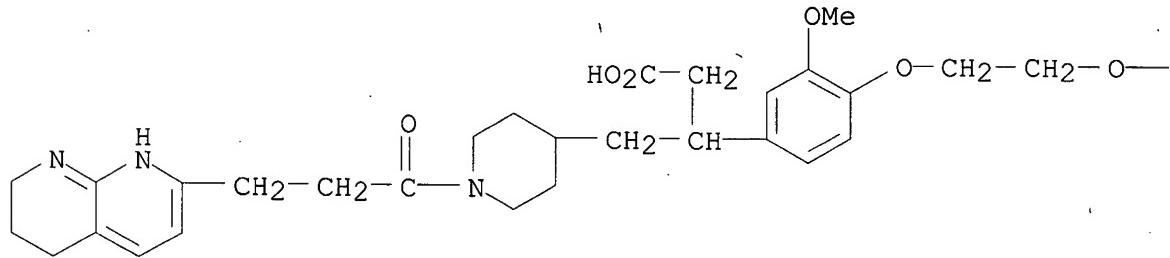
● HCl

10/782,060

RN 791821-38-0 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -[4-[2-(2-mercaptoethoxy)ethoxy]-3-methoxyphenyl]-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



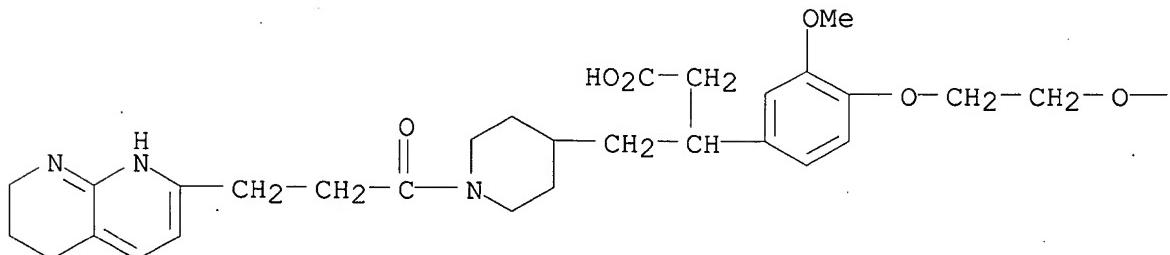
PAGE 1-B

— CH<sub>2</sub>— CH<sub>2</sub>— SH

RN 791821-43-7 CAPLUS

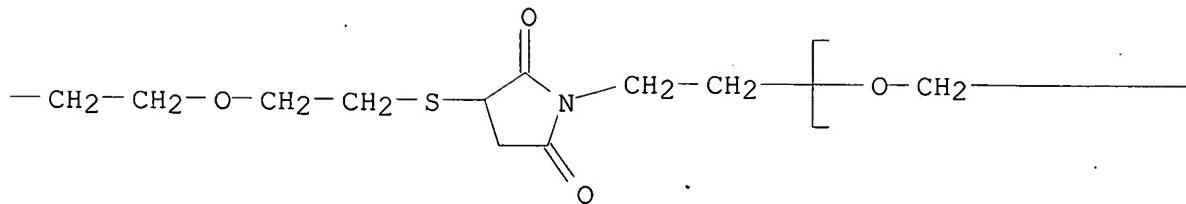
CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[2-[3-[2-[2-[4-[1-(carboxymethyl)-2-[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]ethyl]-2-methoxyphenoxy]ethoxy]ethyl]thio]-2,5-dioxo-1-pyrrolidinyl]ethyl]- $\omega$ -[[7-hydroxy-7-oxido-2,13-dioxo-10-[(1-oxooctadecyl)oxy]-6,8,12-trioxa-3-aza-7-phosphatriacont-1-yl]oxy]- (9CI)  
(CA INDEX NAME)

PAGE 1-A

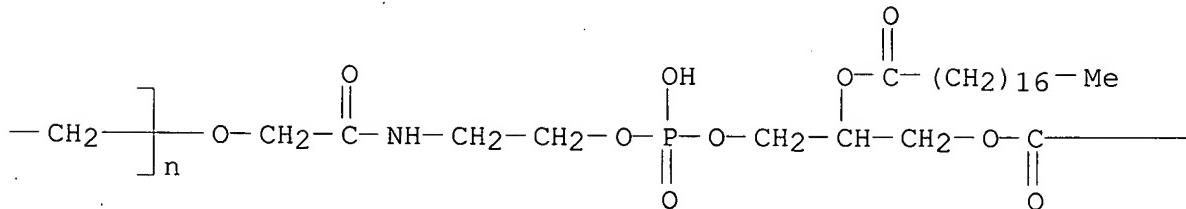


10/782,060

PAGE 1-B



PAGE 1-C



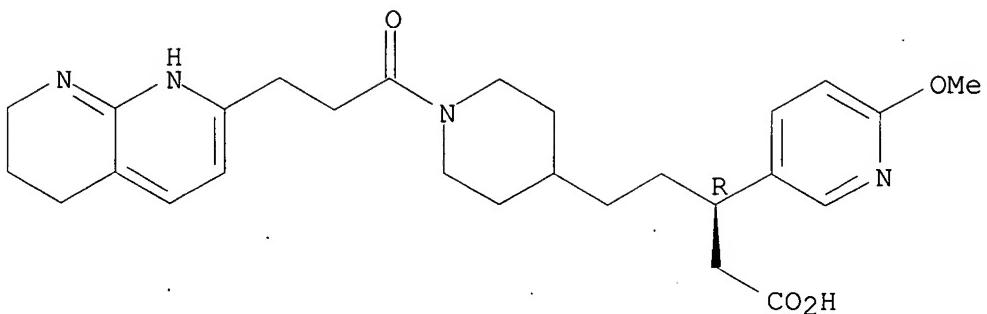
PAGE 1-D

— (CH<sub>2</sub>)<sub>16</sub>— Me

RN 791821-44-8 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy-β-[2-[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]ethyl]-, (βR)-(9CI) (CA INDEX NAME)

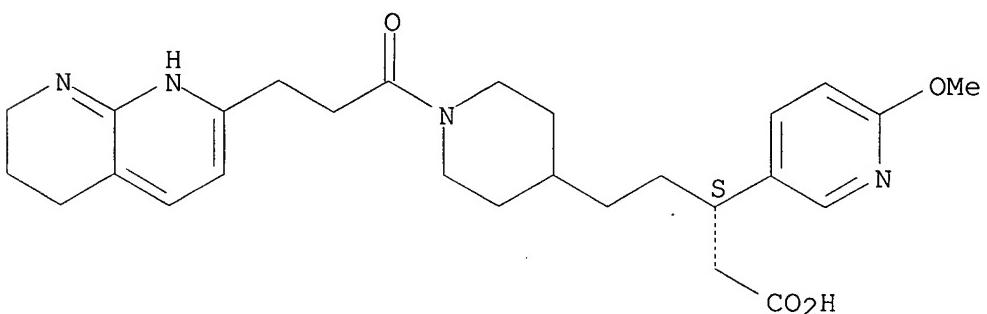
Absolute stereochemistry.



RN 791821-45-9 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy- $\beta$ -[2-[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]ethyl]-, ( $\beta$ S)-(9CI) (CA INDEX NAME)

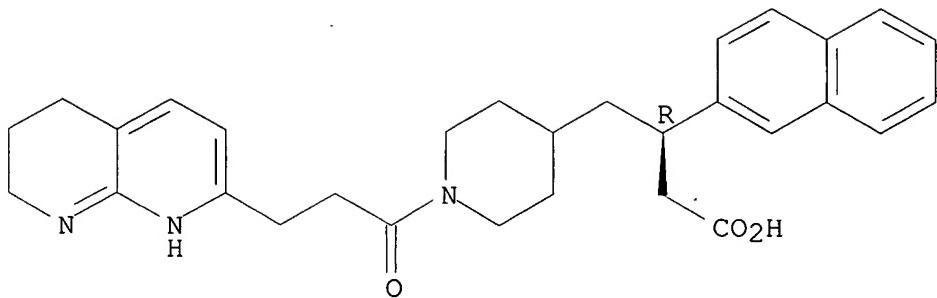
Absolute stereochemistry.



RN 792931-34-1 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -2-naphthalenyl-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, monohydrochloride, ( $\beta$ R)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

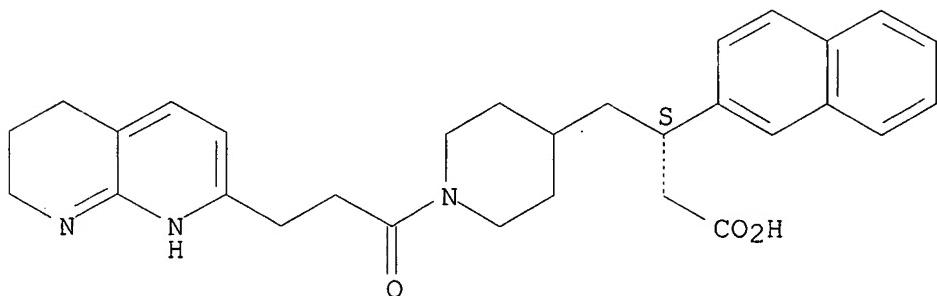


● HCl

RN 792931-35-2 CAPLUS

CN 4-Piperidinobutanoic acid, β-2-naphthalenyl-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, monohydrochloride, (βS)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.



● HCl

IT 669075-36-9P 669075-37-0P 669076-50-0P

669076-51-1P 791820-86-5P 791820-87-6P

791820-88-7P 791820-89-8P 791821-00-6P

791821-01-7P 791821-25-5P 791821-26-6P

RL: PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation of piperidinealkanoic acids as cell targeting compds.)

with

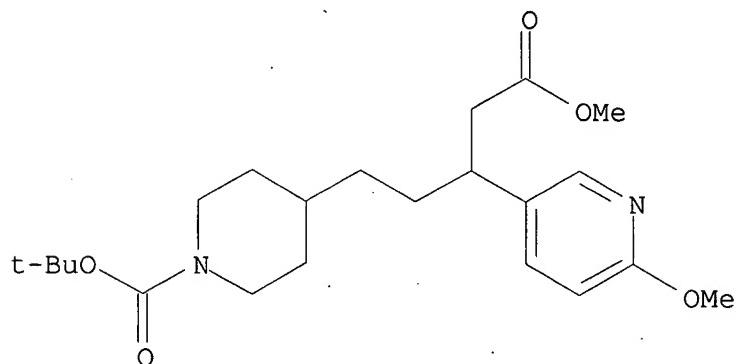
selective affinity to αvβ3, αvβ5, or  
αvβ6 integrin receptors for use with imaging agents or  
liposomes)

RN 669075-36-9 CAPLUS

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CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]ethyl]-6-methoxy-, methyl ester, (+)- (9CI) (CA INDEX NAME)

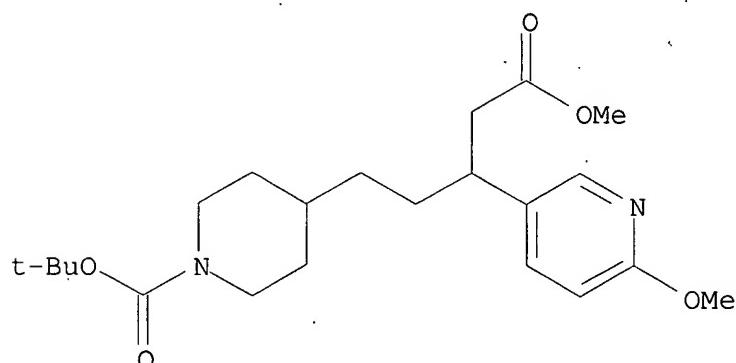
Rotation (+).



RN 669075-37-0 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]ethyl]-6-methoxy-, methyl ester, (-)- (9CI) (CA INDEX NAME)

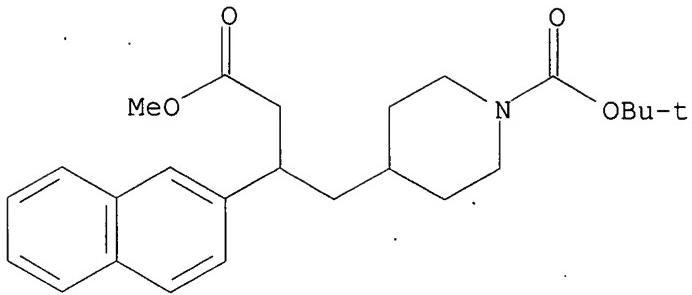
Rotation (-).



RN 669076-50-0 CAPLUS

CN 4-Piperidinebutanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]- $\beta$ -2-naphthalenyl-, methyl ester, (+)- (9CI) (CA INDEX NAME)

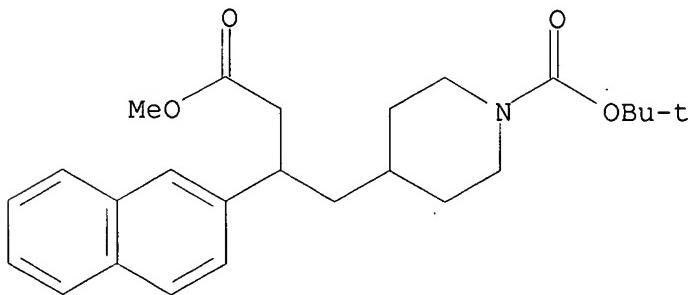
Rotation (+).



RN 669076-51-1 CAPLUS

CN 4-Piperidinebutanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]-β-2-naphthalenyl-, methyl ester, (-) - (9CI) (CA INDEX NAME)

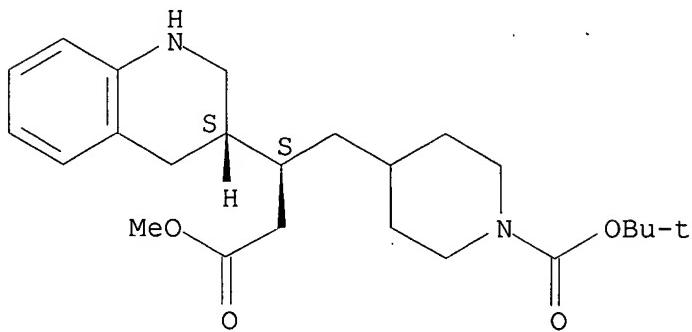
Rotation (-).



RN 791820-86-5 CAPLUS

CN 3-Quinolinepropanoic acid, β-[[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]methyl]-1,2,3,4-tetrahydro-, methyl ester, (βS,3S) - (9CI) (CA INDEX NAME)

Absolute stereochemistry.

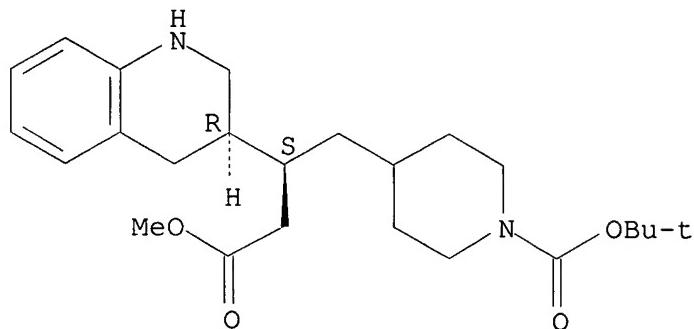


RN 791820-87-6 CAPLUS

10/782,060

CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]methyl]-1,2,3,4-tetrahydro-, methyl ester, ( $\beta$ S,3R)- (9CI)  
(CA INDEX NAME)

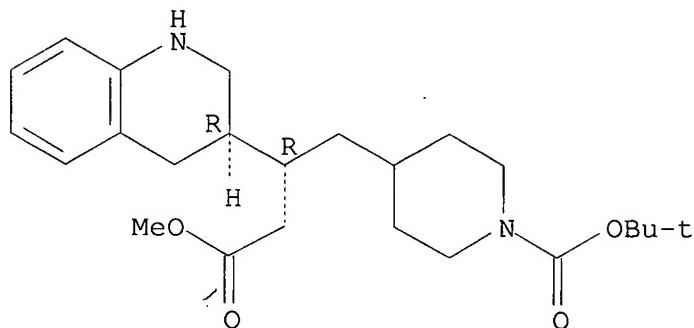
Absolute stereochemistry.



RN 791820-88-7 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]methyl]-1,2,3,4-tetrahydro-, methyl ester, ( $\beta$ R,3R)- (9CI)  
(CA INDEX NAME)

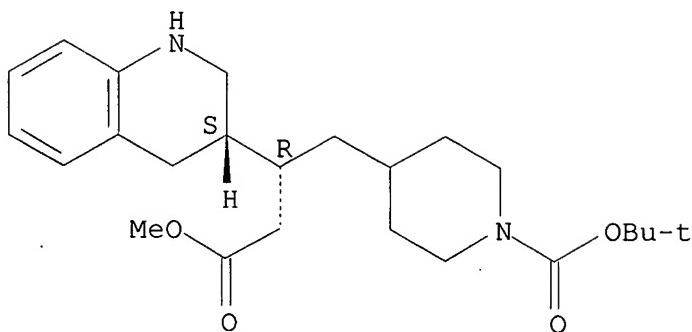
Absolute stereochemistry.



RN 791820-89-8 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]methyl]-1,2,3,4-tetrahydro-, methyl ester, ( $\beta$ R,3S)- (9CI)  
(CA INDEX NAME)

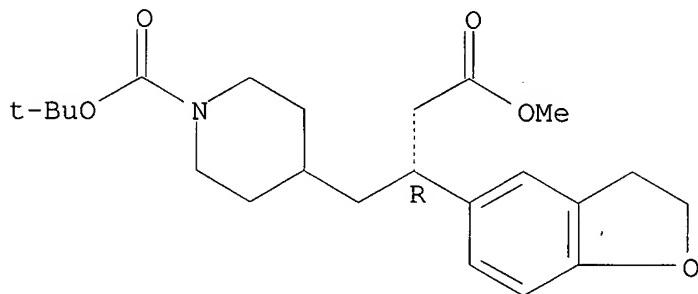
Absolute stereochemistry.



RN 791821-00-6 CAPLUS

CN 4-Piperidinobutanoic acid,  $\beta$ -(2,3-dihydro-5-benzofuranyl)-1-[(1,1-dimethylethoxy)carbonyl]-, methyl ester, ( $\beta$ R)- (9CI) (CA INDEX NAME)

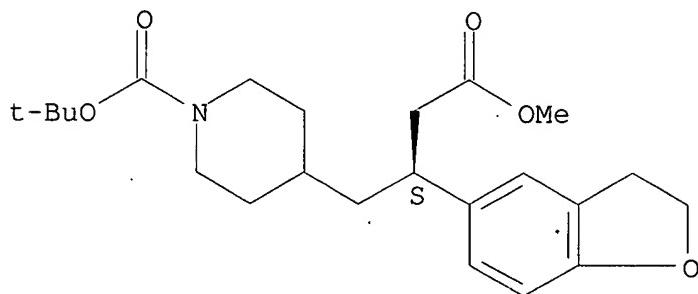
Absolute stereochemistry.



RN 791821-01-7 CAPLUS

CN 4-Piperidinobutanoic acid,  $\beta$ -(2,3-dihydro-5-benzofuranyl)-1-[(1,1-dimethylethoxy)carbonyl]-, methyl ester, ( $\beta$ S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



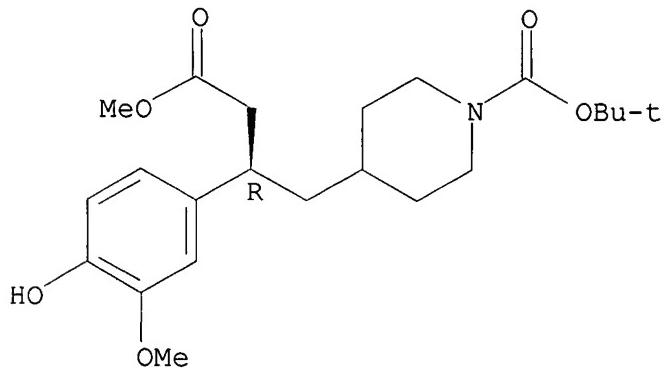
RN 791821-25-5 CAPLUS

CN 4-Piperidinobutanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]- $\beta$ -(4-

10/782,060

hydroxy-3-methoxyphenyl)-, methyl ester, ( $\beta$ R)- (9CI) (CA INDEX NAME)

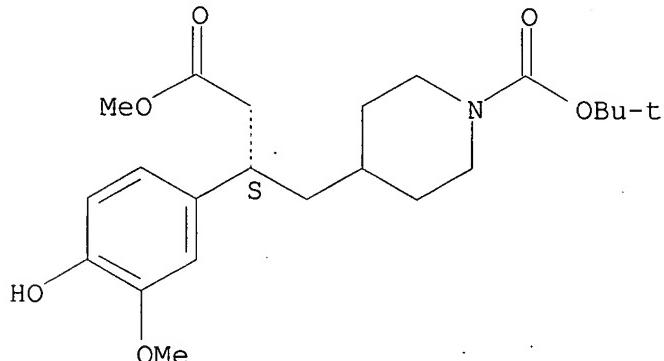
Absolute stereochemistry.



RN 791821-26-6 CAPLUS

CN 4-Piperidinebutanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]- $\beta$ - (4-hydroxy-3-methoxyphenyl)-, methyl ester, ( $\beta$ S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

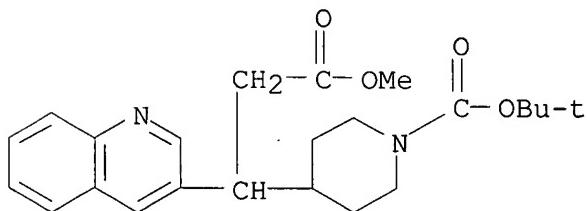


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669075-05-2P 669075-06-3P 669075-08-5P  
669075-14-3P 669075-16-5P 669075-18-7P  
669075-20-1P 669075-26-7P 669075-33-6P  
669075-35-8P 669075-44-9P 669075-47-2P  
669075-79-0P 669075-88-1P 669075-92-7P  
669075-96-1P 669076-07-7P 669076-34-0P  
669076-41-9P 669076-44-2P 669076-49-7P  
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791820-99-0P 791821-06-2P 791821-07-3P  
791821-19-7P 791821-20-0P 791821-32-4P  
791821-33-5P 791821-36-8P 791821-37-9P  
791821-39-1P 791821-40-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
 RACT  
 (Reactant or reagent)  
 (preparation of piperidinealkanoic acids as cell targeting compds.  
 with  
 selective affinity to  $\alpha v\beta 3$ ,  $\alpha v\beta 5$ , or  
 $\alpha v\beta 6$  integrin receptors for use with imaging agents or  
 liposomes)

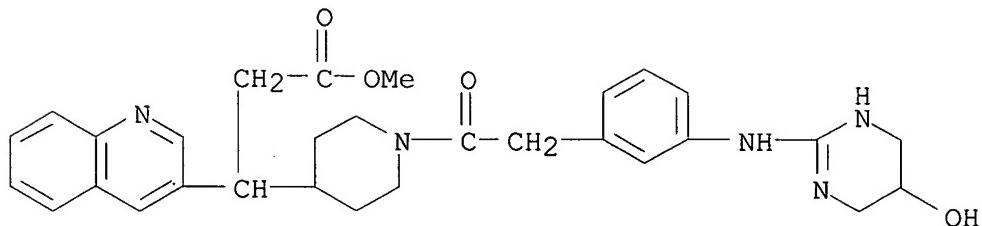
RN 669074-91-3 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[1-[1,1-dimethylethoxy carbonyl]-4-piperidinyl]-, methyl ester (9CI) (CA INDEX NAME)



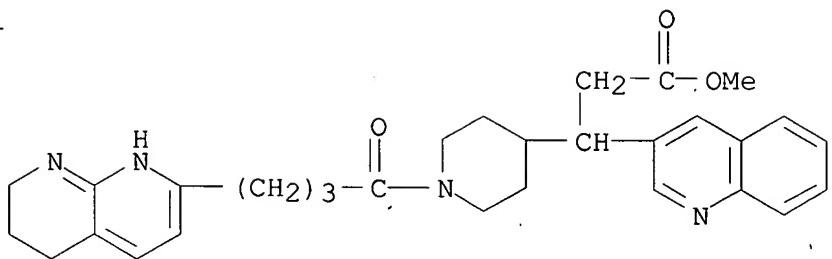
RN 669074-96-8 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]phenyl]acetyl]-4-piperidinyl]-, methyl ester (9CI)  
 (CA INDEX NAME)



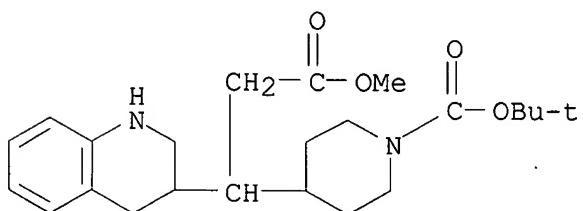
RN 669074-99-1 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]-, methyl ester (9CI) (CA INDEX NAME)



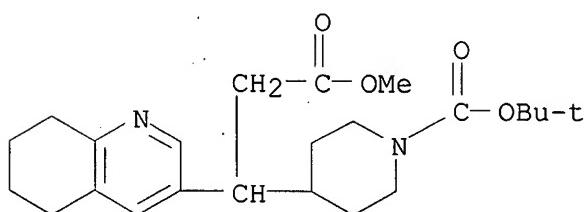
RN 669075-05-2 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]-1,2,3,4-tetrahydro-, methyl ester (9CI) (CA INDEX NAME)



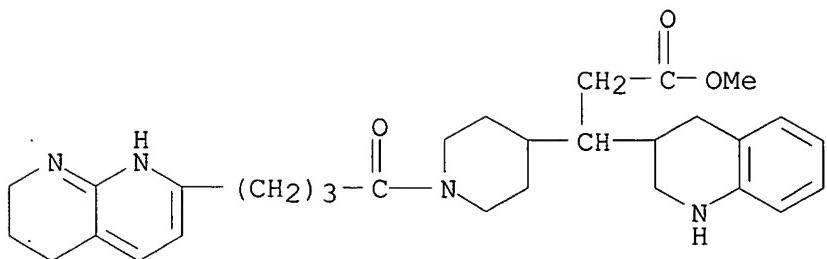
RN 669075-06-3 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]-5,6,7,8-tetrahydro-, methyl ester (9CI) (CA INDEX NAME)



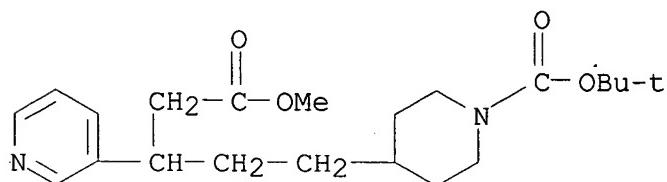
RN 669075-08-5 CAPLUS

CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro- $\beta$ -[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]-, methyl ester (9CI) (CA INDEX NAME)



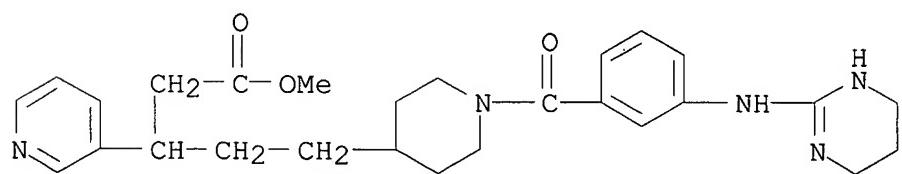
RN 669075-14-3 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]ethyl]-, methyl ester (9CI) (CA INDEX NAME)



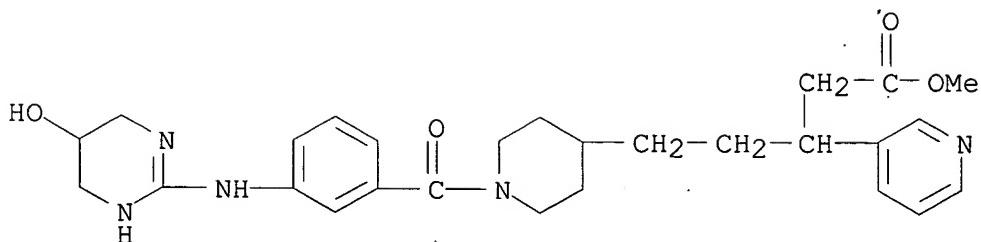
RN 669075-16-5 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[3-[(1,4,5,6-tetrahydro-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]-, methyl ester (9CI)  
(CA INDEX NAME)



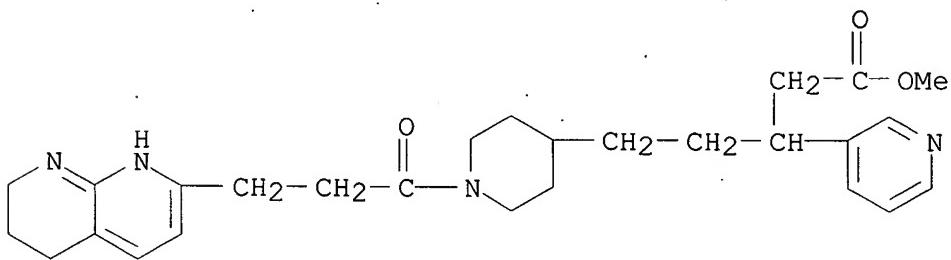
RN 669075-18-7 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]-, methyl ester (9CI)  
(CA INDEX NAME)



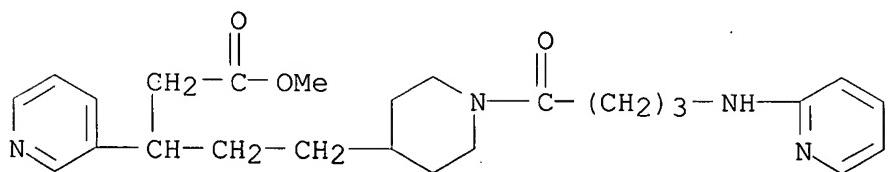
RN 669075-20-1 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]ethyl]-, methyl ester (9CI)  
(CA INDEX NAME)



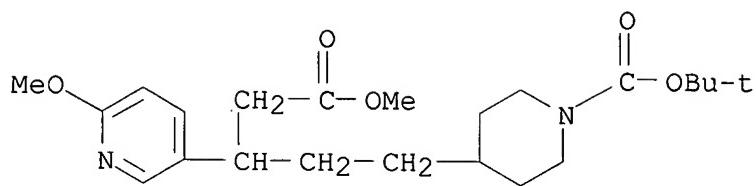
RN 669075-26-7 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[1-oxo-4-(2-pyridinylamino)butyl]-4-piperidinyl]ethyl]-, methyl ester (9CI) (CA INDEX NAME)



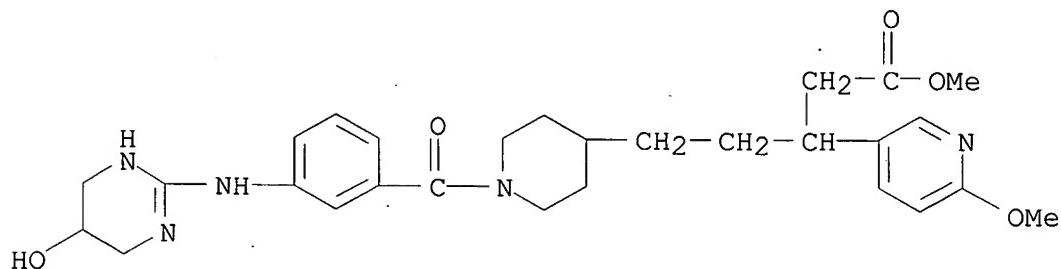
RN 669075-33-6 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]ethyl]-6-methoxy-, methyl ester (9CI) (CA INDEX NAME)



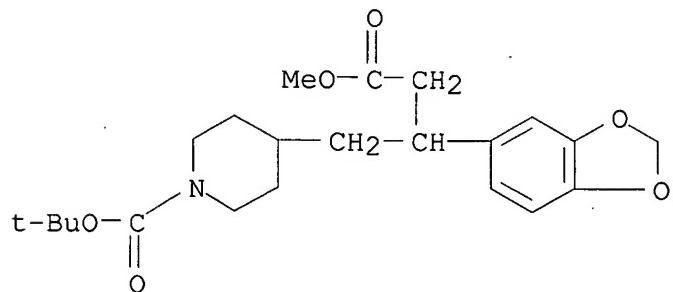
RN 669075-35-8 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy-β-[2-[1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]-, methyl ester  
(9CI) (CA INDEX NAME)



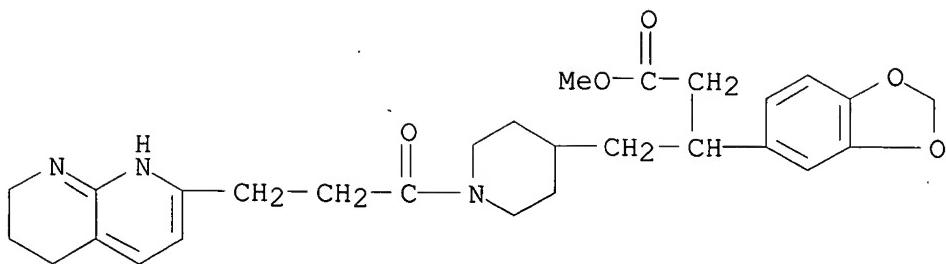
RN 669075-44-9 CAPLUS

CN 4-Piperidinebutanoic acid, β-1,3-benzodioxol-5-yl-1-[(1,1-dimethylethoxy)carbonyl]-, methyl ester (9CI) (CA INDEX NAME)



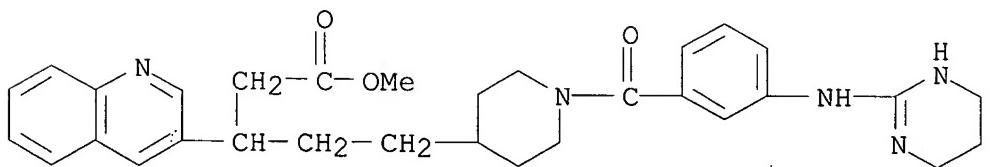
RN 669075-47-2 CAPLUS

CN 4-Piperidinebutanoic acid, β-1,3-benzodioxol-5-yl-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, methyl ester (9CI) (CA INDEX NAME)



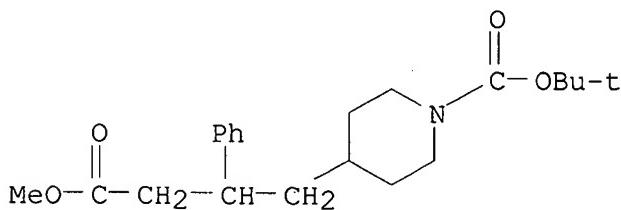
RN 669075-79-0 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[2-[1-[3-[(1,4,5,6-tetrahydro-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]-, methyl ester (9CI)  
(CA INDEX NAME)



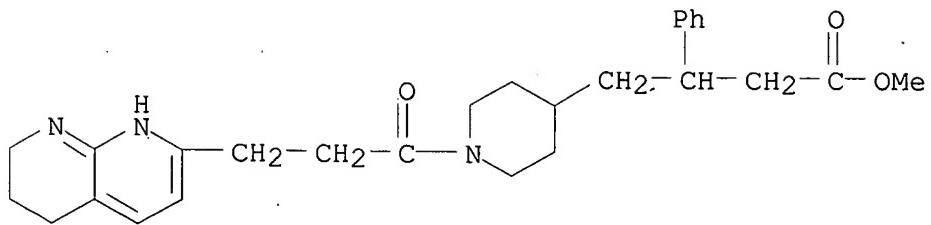
RN 669075-88-1 CAPLUS

CN 4-Piperidinebutanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]- $\beta$ -phenyl-, methyl ester (9CI) (CA INDEX NAME)



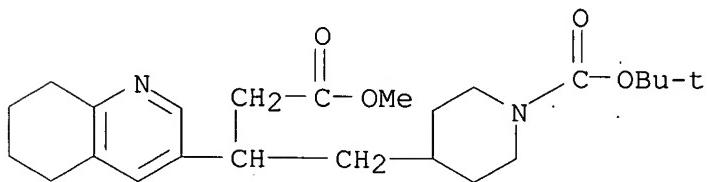
RN 669075-92-7 CAPLUS

CN 4-Piperidinebutanoic acid,  
1-[(1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl)- $\beta$ -phenyl]-, methyl ester (9CI) (CA INDEX NAME)



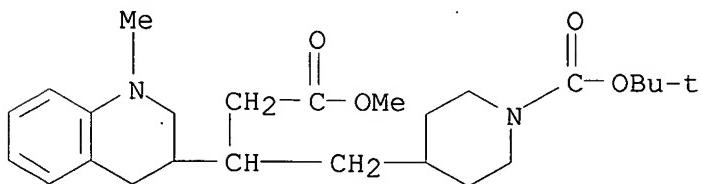
RN 669075-96-1 CAPLUS

CN 3-Quinolinespropanoic acid,  $\beta$ -[[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl)methyl]-5,6,7,8-tetrahydro-, methyl ester (9CI) (CA INDEX NAME)



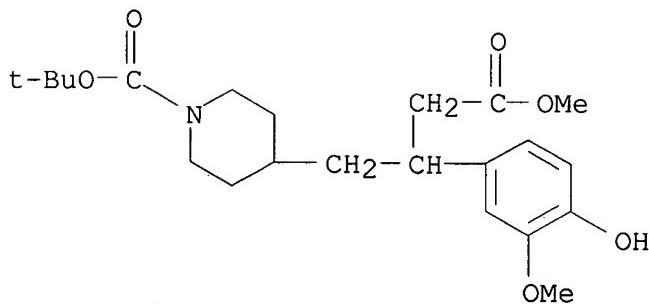
RN 669076-07-7 CAPLUS

CN 3-Quinolinespropanoic acid,  $\beta$ -[[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl)methyl]-1,2,3,4-tetrahydro-1-methyl-, methyl ester (9CI)  
(CA INDEX NAME)



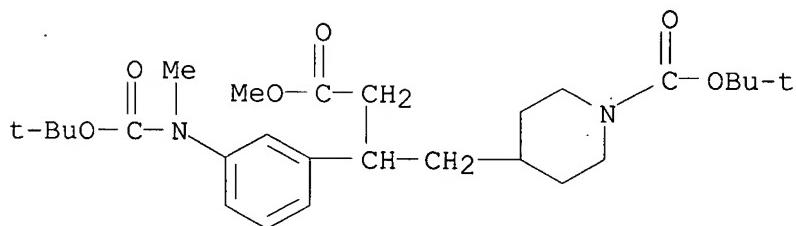
RN 669076-34-0 CAPLUS

CN 4-Piperidinebutanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]- $\beta$ -(4-hydroxy-3-methoxyphenyl)-, methyl ester (9CI) (CA INDEX NAME)



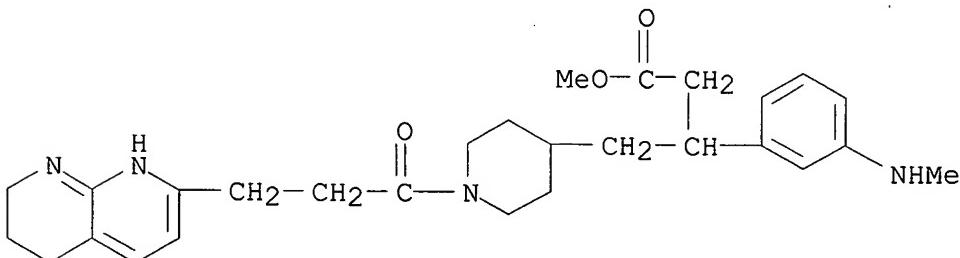
RN 669076-41-9 CAPLUS

CN 4-Piperidinebutanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]-β-[3-[(1,1-dimethylethoxy)carbonyl]methylamino]phenyl-, methyl ester (9CI)  
(CA INDEX NAME)



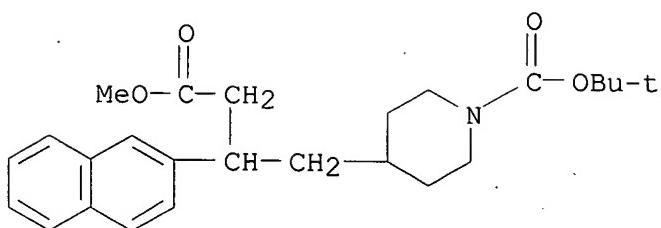
RN 669076-44-2 CAPLUS

CN 4-Piperidinebutanoic acid, β-[3-(methylamino)phenyl]-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, methyl ester (9CI)  
(CA INDEX NAME)



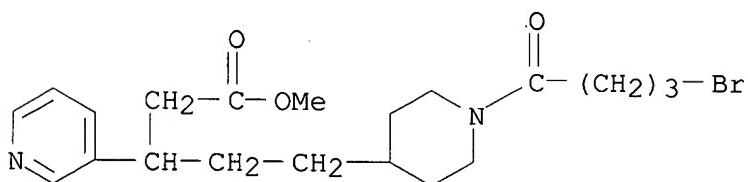
RN 669076-49-7 CAPLUS

CN 4-Piperidinebutanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]-β-2-naphthalenyl-, methyl ester (9CI) (CA INDEX NAME)



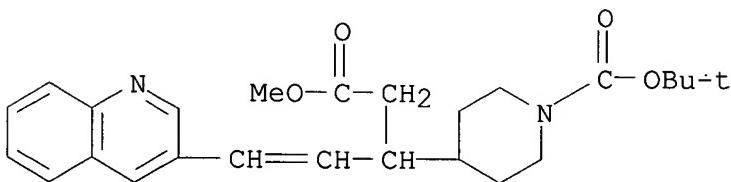
RN 791820-73-0 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-(4-bromo-1-oxobutyl)-4-piperidinyl]ethyl]-, methyl ester (9CI) (CA INDEX NAME)



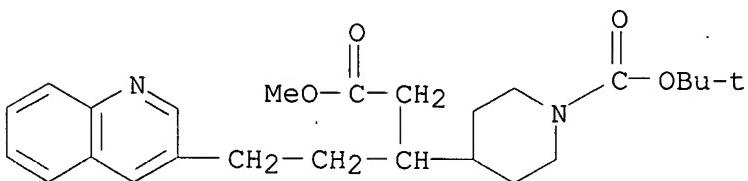
RN 791820-76-3 CAPLUS

CN 4-Piperidinepropanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]- $\beta$ -[2-(3-quinolinyl)ethenyl]-, methyl ester (9CI) (CA INDEX NAME)



RN 791820-77-4 CAPLUS

CN 3-Quinolinepentanoic acid,  $\beta$ -[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]-, methyl ester (9CI) (CA INDEX NAME)

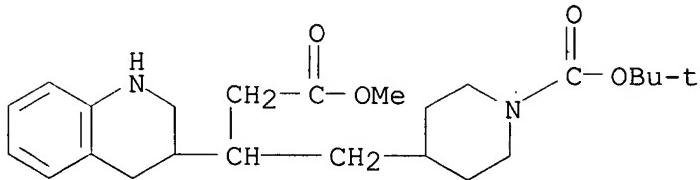


RN 791820-85-4 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[1-[(1,1-dimethylethoxy)carbonyl]-4-

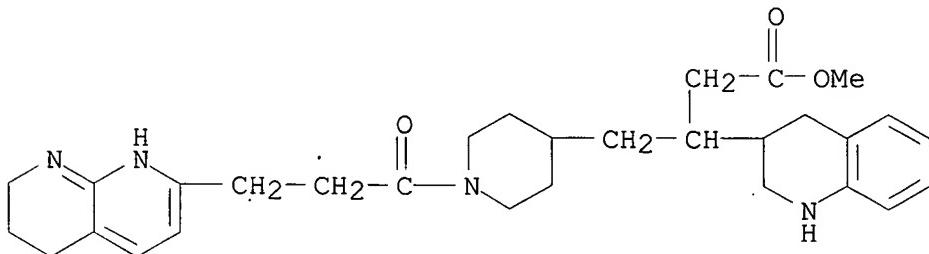
10/782,060

piperidinyl]methyl]-1,2,3,4-tetrahydro-, methyl ester (9CI) (CA INDEX NAME)



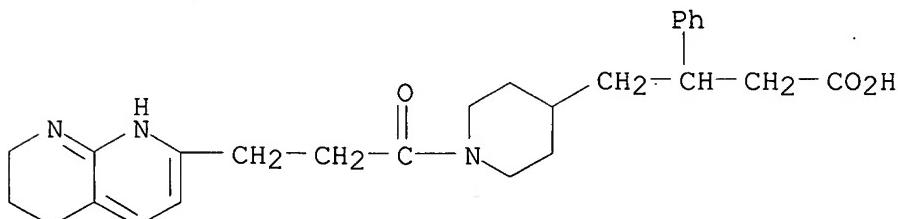
RN 791820-91-2 CAPLUS

CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro-β-[ [1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-, methyl ester (9CI) (CA INDEX NAME)



RN 791820-92-3 CAPLUS

CN 4-Piperidinebutanoic acid,  
1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-β-phenyl-, monosodium salt (9CI) (CA INDEX NAME)

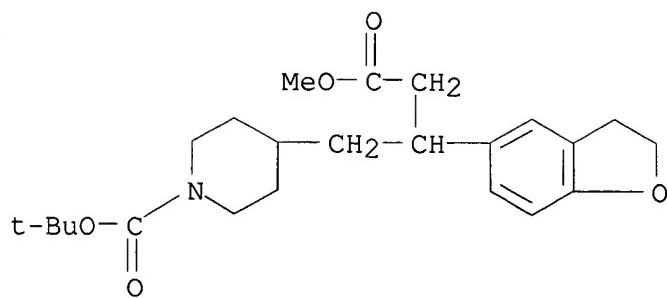


● Na

RN 791820-99-0 CAPLUS

CN 4-Piperidinebutanoic acid, β-(2,3-dihydro-5-benzofuranyl)-1-[(1,1-dimethylethoxy)carbonyl]-, methyl ester (9CI) (CA INDEX NAME)

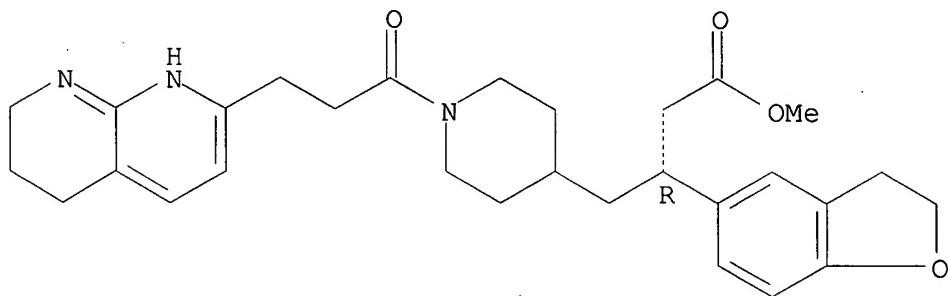
10/782,060



RN 791821-06-2 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(2,3-dihydro-5-benzofuranyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, methyl ester,  
( $\beta$ R)- (9CI) (CA INDEX NAME)

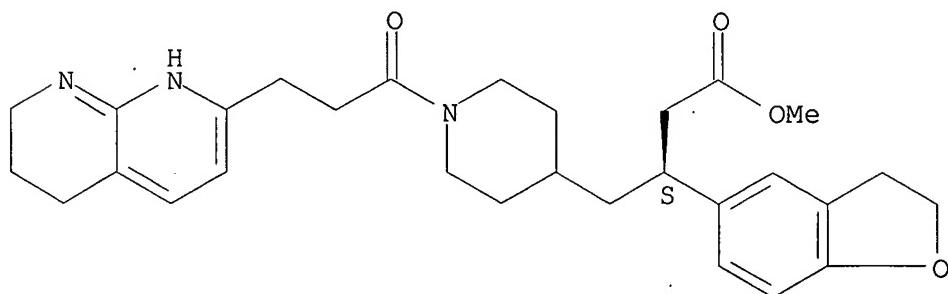
Absolute stereochemistry.



RN 791821-07-3 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(2,3-dihydro-5-benzofuranyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, methyl ester,  
( $\beta$ S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

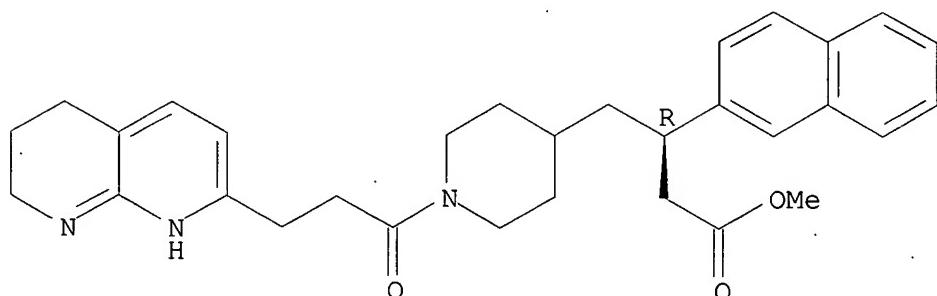


RN 791821-19-7 CAPLUS

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CN 4-Piperidinebutanoic acid,  $\beta$ -2-naphthalenyl-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, methyl ester, ( $\beta$ R)- (9CI)  
(CA INDEX NAME)

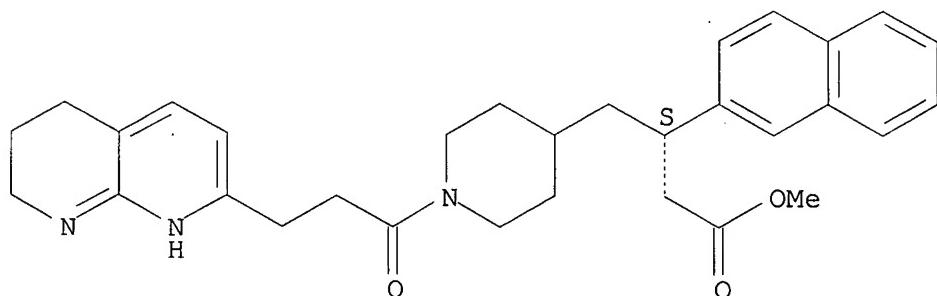
Absolute stereochemistry.



RN 791821-20-0 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -2-naphthalenyl-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, methyl ester, ( $\beta$ S)- (9CI)  
(CA INDEX NAME)

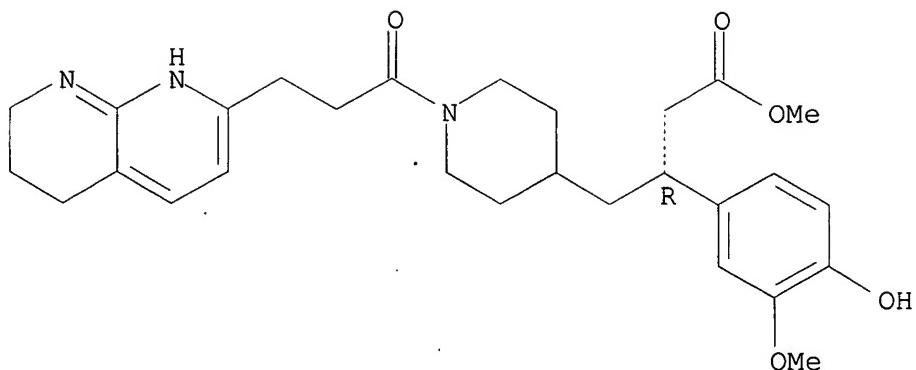
Absolute stereochemistry.



RN 791821-32-4 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(4-hydroxy-3-methoxyphenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, methyl ester,  
( $\beta$ R)- (9CI) (CA INDEX NAME)

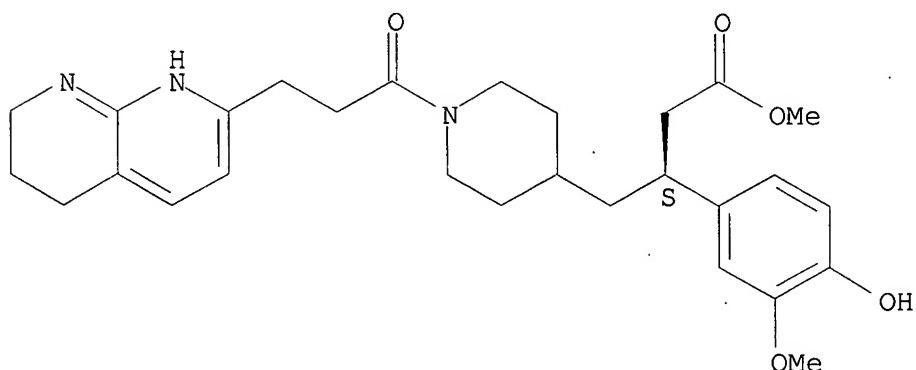
Absolute stereochemistry.



RN 791821-33-5 CAPLUS

CN 4-Piperidinobutanoic acid,  $\beta$ -[4-hydroxy-3-methoxyphenyl]-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, methyl ester, ( $\beta$ S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

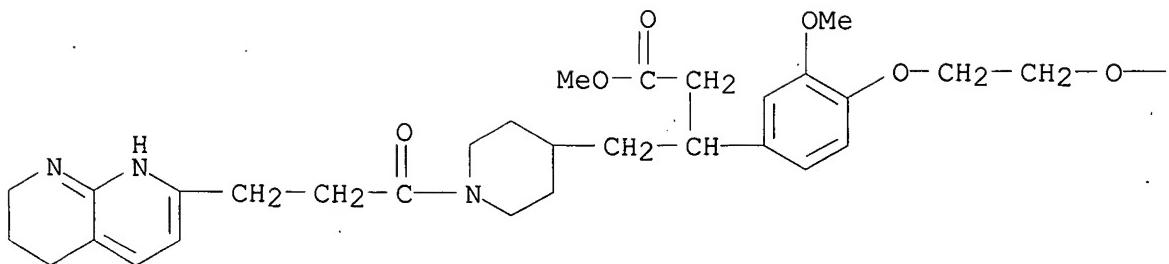


RN 791821-36-8 CAPLUS

CN 4-Piperidinobutanoic acid,  $\beta$ -[4-[2-(2-bromoethoxy)ethoxy]-3-methoxyphenyl]-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, methyl ester (9CI) (CA INDEX NAME)

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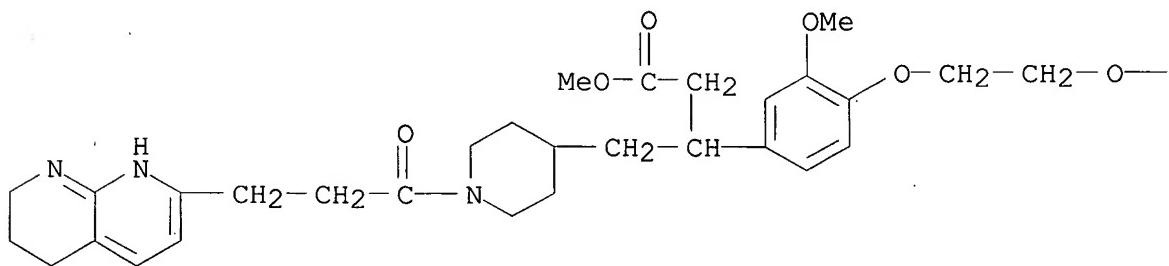
PAGE 1-B

— CH<sub>2</sub>—CH<sub>2</sub>Br

RN 791821-37-9 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -[4-[2-[2-(acetylthio)ethoxy]ethoxy]-3-methoxyphenyl]-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, methyl ester (9CI) (CA INDEX NAME)

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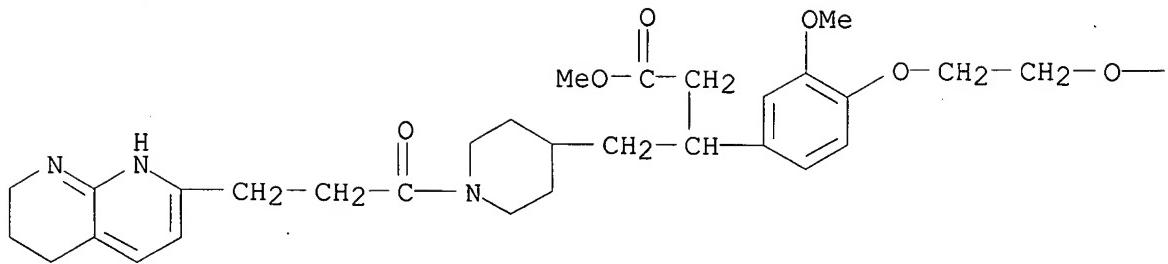
— CH<sub>2</sub>—CH<sub>2</sub>—SAc

RN 791821-39-1 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -[4-[2-[2-(2-chloroethoxy)ethoxy]ethoxy]-3-methoxyphenyl]-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, methyl ester (9CI) (CA INDEX NAME)

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PAGE 1-A



PAGE 1-B

— CH<sub>2</sub>— CH<sub>2</sub>— O— CH<sub>2</sub>— CH<sub>2</sub>Cl

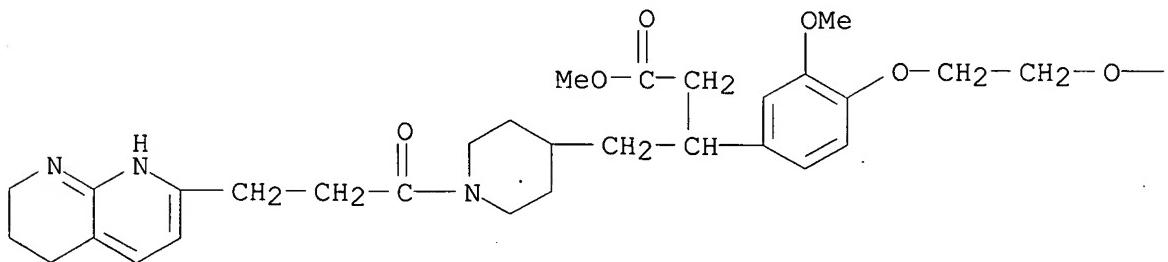
RN 791821-40-4 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -[4-[2-[2-[2-(acetylthio)ethoxy]ethoxy]-3-methoxyphenyl]-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, methyl ester (9CI) (CA

INDEX

NAME)

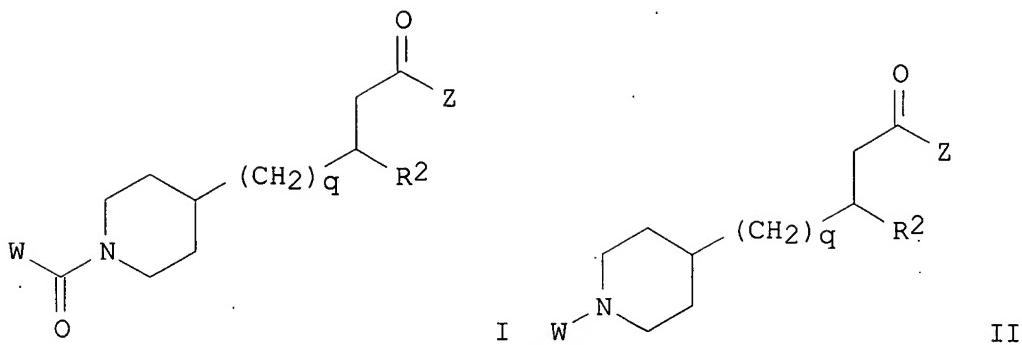
PAGE 1-A



PAGE 1-B

— CH<sub>2</sub>— CH<sub>2</sub>— O— CH<sub>2</sub>— CH<sub>2</sub>— SAC

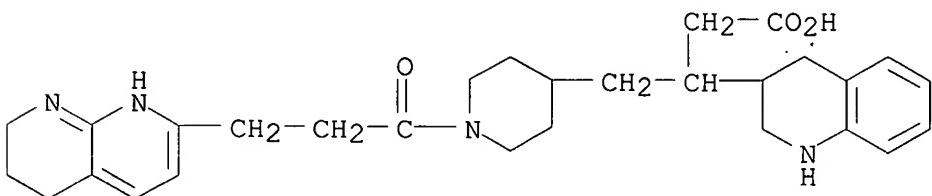
GI



AB The present invention relates to the synthesis and biol. application of piperidinoyl carboxylic acid integrin antagonists affinity moiety of formula (I) and formula (II) [ $W = -CO-6\text{alkyl}(R1)$ ,  $-C1-6\text{ alkyl}(R1a)$ ,  $-C0-6$   
 $\text{alkylaryl}(R1, R8)$ ,  $-C0-6\text{ alkylheterocyclyl}(R1, R8)$ , etc.;  $R1 = H$ , (un)substituted  $NH2$ , -heterocyclyl-(R8), -heteroaryl-(R8);  $R1a = -C(R4)(:NR4)$ ,  $-C(:NR4)-N(R4)2$ ,  $-C(:NR4)-N(R4)(R6)$ ,  $-C(:N-R4)-N(R4)-C(O)-R4$ , etc.;  $R4 = H$ ,  $C1-8\text{ alkyl}$ ;  $R8 = H$ ,  $-C1-8\text{ alkyl}(R9)$ ,  $-CHO$ ,  $-CO-C1-8\text{ alkyl}(R9)$ ,  $-CONH2$ , etc.;  $R9 = H$ ,  $C1-8\text{ alkoxy}$ , each (un)substituted  $NH2$ ,  $CONH2$ , or  $SO2NH2$ ,  $CHO$ , etc.;  $q = 0-3$ ;  $R2 = -C1-8\text{ alkyl}(R7)(R11)$ ,  $-C2-8\text{ alkenyl}(R7)(R11)$ ,  $-C2-8\text{ alkynyl}(R7)(R11)$ , -cycloalkyl-(R7)(R11), -heterocyclyl-(R8)(R12), etc.;  $R7 = H$ ,  $-C1-8\text{ alkoxy}(R9)$ , each (un)substituted  $NH2$  or  $CONH2$ ,  $CHO$ ,  $-CO-C1-8\text{ alkyl}(R9)$ , etc.;  $R11 = -C1-8\text{ alkyl}(R14)$ ,  $-O-C1-8\text{ alkyl}(R14)$ ,  $-NH-C1-8\text{ alkyl}(R14)$ ,  $-S-C1-8\text{ alkyl}(R14)$ , etc.;  $R12 = -C1-8\text{ alkyl}(R14)$ ,  $-O-C1-8\text{ alkyl}(R14)$ ,  $-NH-C1-8\text{ alkyl}(R14)$ , etc.;  $R14$  when  $R11$  and  $R12$  terminates with a  $C(:O)$  is selected from the group consisting of  $H$ ,  $OH$ ,  $-OC1-4\text{ alkyl}$ , and  $NH2$ ; otherwise  $R14 = OH$ ,  $SH$ ,  $CO2H$ ,  $CO2-1-4\text{ alkyl}$ ;  $Z = OH$ , (un)substituted  $NH2$ ,  $-O-C1-8\text{ alkyl}$ ,  $O-C1-8\text{ alkyl-OH}$ ,  $-O-C1-8\text{ alkyl-C1-8 alkoxy}$ , etc.] and pharmaceutically acceptable salts, racemic mixts., and enantiomers thereof. These affinity moieties maybe used with imaging agents or liposomes to target cells that express the  $\alpha v\beta 3$ ,  $\alpha v\beta 5$ , or  $\alpha v\beta 6$  integrin receptors. For example, an enantiomer of 6-methoxy- $\beta$ -[[1-[1-oxo-3-(5,6,7,8-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-3-pyridinepropanoic acid inhibited the binding of vitronectin to  $\alpha v\beta 3$ ,  $\alpha v\beta 5$ , and  $\alpha IIb\beta 3$  receptors with IC<sub>50</sub> of  $0.0003 \pm 0.00002$ ,  $0.0042 \pm 0.0018$ , and  $1.83 \pm 0.57\text{ }\mu M$ , resp.

10/782,060

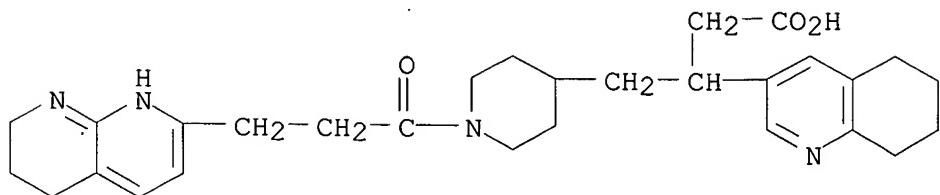
ACCESSION NUMBER: 2004:880527 CAPLUS  
DOCUMENT NUMBER: 142:74427  
TITLE: 1,2,3,4-Tetrahydroquinoline-containing  $\alpha\beta 3$  integrin antagonists with enhanced oral bioavailability  
AUTHOR(S): Ghosh, Shyamali; Santulli, Rosemary J.; Kinney, William A.; DeCorte, Bart L.; Liu, Li; Lewis, Joan M.;  
Proost, Jef C.; Leo, Gregory C.; Masucci, John; Hageman, William E.; Thompson, Andrew S.; Chen, Ian;  
Kawahama, Reiko; Tuman, Robert W.; Galembo, Robert A.; Johnson, Dana L.; Damiano, Bruce P.; Maryanoff, Bruce E.  
CORPORATE SOURCE: Drug Discovery, Johnson & Johnson Pharmaceutical Research & Development, Spring House, PA,  
19477-0776,  
SOURCE: USA  
Bioorganic & Medicinal Chemistry Letters (2004), 14(23), 5937-5941  
CODEN: BMCLE8; ISSN: 0960-894X  
PUBLISHER: Elsevier B.V.  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
OTHER SOURCE(S): CASREACT 142:74427  
IT 669075-10-9P 669075-11-0P 669075-38-1P  
669075-39-2P 669075-53-0P 669076-08-8P  
669076-79-3P 669076-80-6P  
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)  
(preparation of 1,2,3,4-tetrahydroquinoline-containing  $\alpha\beta 3$  integrin antagonists with enhanced oral bioavailability)  
RN 669075-10-9 CAPLUS  
CN 3-Quinolinespropanoic acid, 1,2,3,4-tetrahydro- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-(9CI)  
(CA INDEX NAME)



RN 669075-11-0 CAPLUS  
CN 3-Quinolinespropanoic acid, 5,6,7,8-tetrahydro- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-

10/782,060

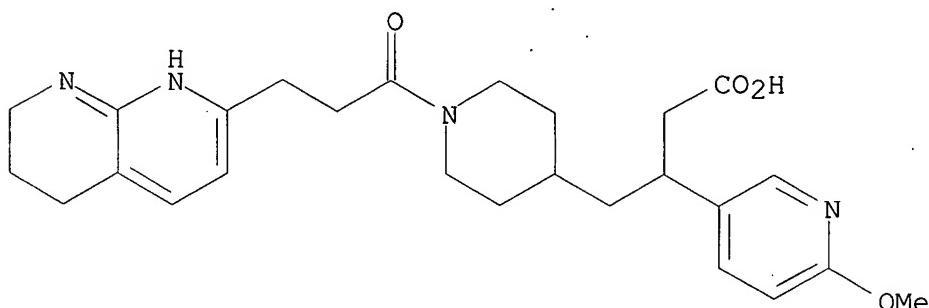
(CA tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI)  
INDEX NAME)



RN 669075-38-1 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy-β-[ [1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-, (+)-(9CI) (CA INDEX NAME)

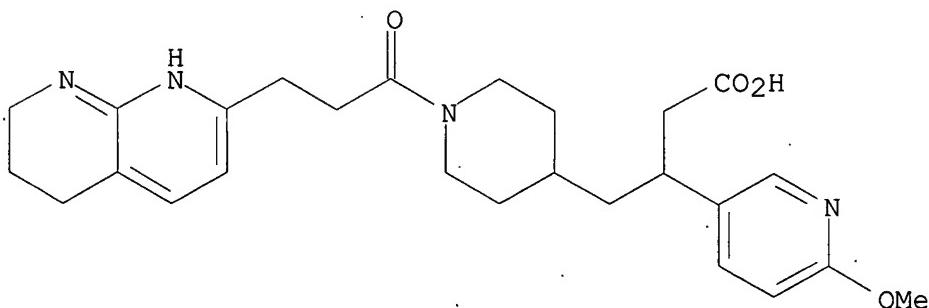
Rotation (+).



RN 669075-39-2 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy-β-[ [1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-, (-)-(9CI) (CA INDEX NAME)

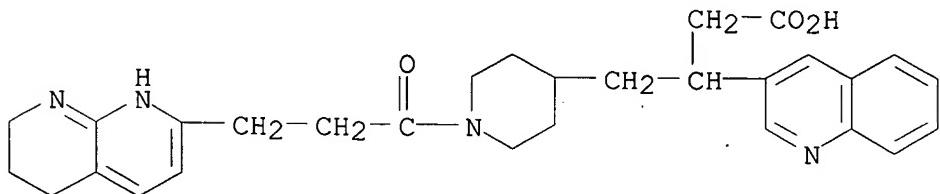
Rotation (-).



RN 669075-53-0 CAPLUS

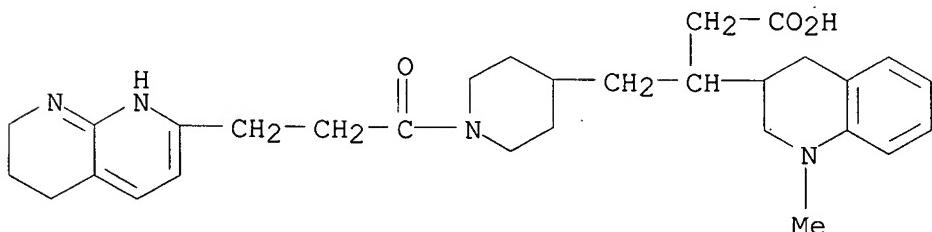
10/782,060

CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI) (CA INDEX NAME)



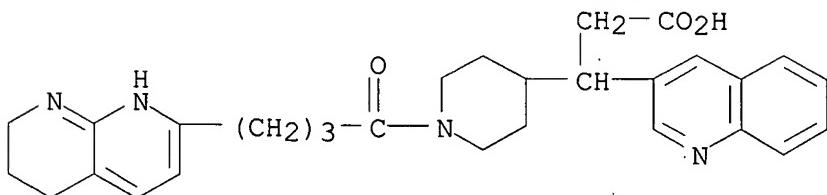
RN 669076-08-8 CAPLUS

CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro-1-methyl- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI) (CA INDEX NAME)



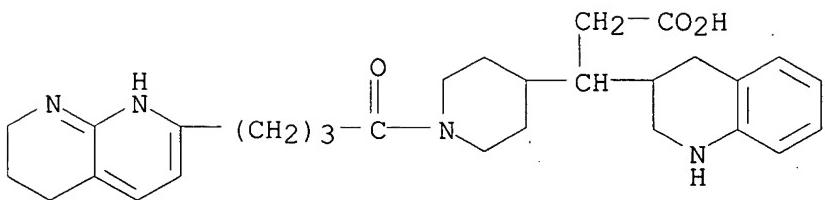
RN 669076-79-3 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]- (9CI) (CA INDEX NAME)



RN 669076-80-6 CAPLUS

CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro- $\beta$ -[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]- (9CI) (CA INDEX NAME)



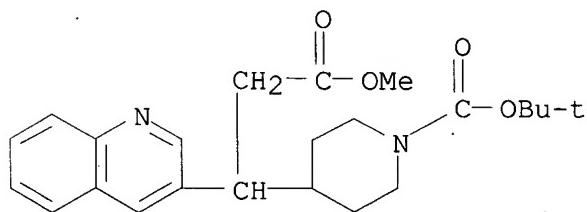
IT 669074-91-3P 669074-99-1P 669075-05-2P  
 669075-06-3P 669075-08-5P 669075-96-1P  
 791820-86-5P 791820-87-6P 791820-88-7P  
 791820-89-8P 791820-91-2P 811842-91-8P  
 852286-61-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
 RACT

(Reactant or reagent)  
 (preparation of 1,2,3,4-tetrahydroquinoline-containing  $\alpha\beta 3$   
 integrin antagonists with enhanced oral bioavailability)

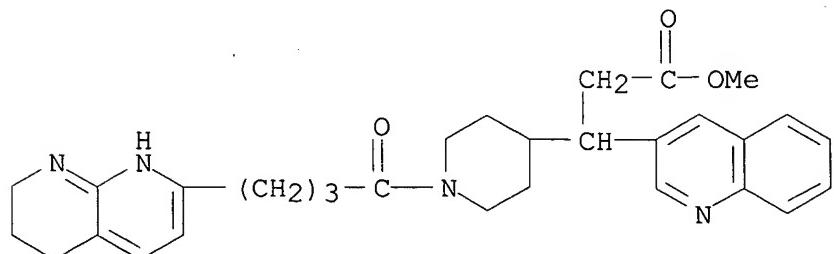
RN 669074-91-3 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]-, methyl ester (9CI) (CA INDEX NAME)



RN 669074-99-1 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]-, methyl ester (9CI) (CA INDEX NAME)

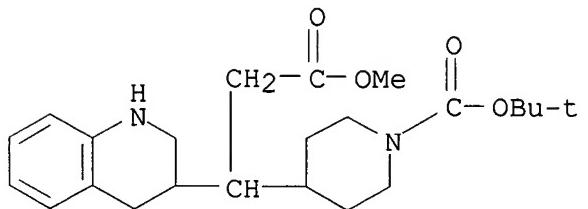


RN 669075-05-2 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[1-[(1,1-dimethylethoxy)carbonyl]-4-

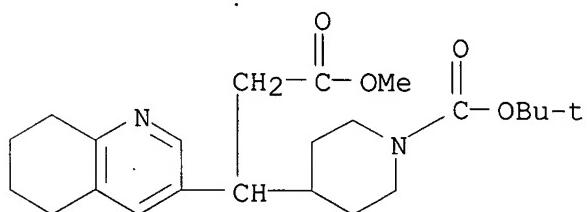
10/782,060

piperidinyl]-1,2,3,4-tetrahydro-, methyl ester (9CI) (CA INDEX NAME)



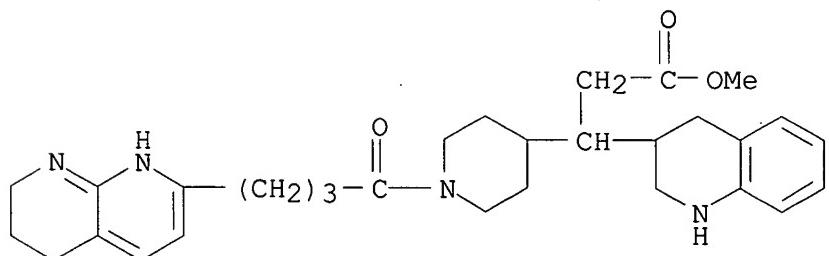
RN 669075-06-3 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]-5,6,7,8-tetrahydro-, methyl ester (9CI) (CA INDEX NAME)



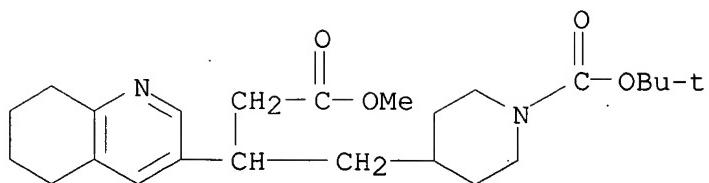
RN 669075-08-5 CAPLUS

CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro- $\beta$ -[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]-, methyl ester (9CI) (CA INDEX NAME)



RN 669075-96-1 CAPLUS

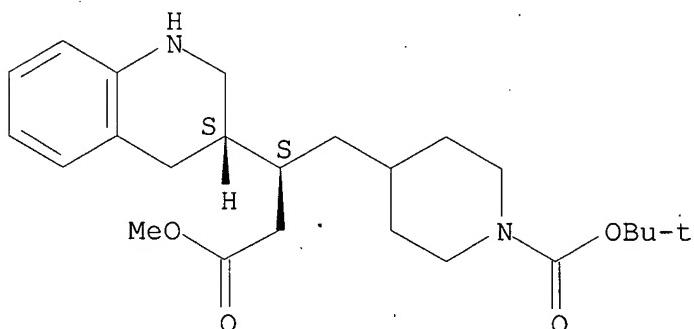
CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]methyl]-5,6,7,8-tetrahydro-, methyl ester (9CI) (CA INDEX NAME)



RN 791820-86-5 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]methyl]-1,2,3,4-tetrahydro-, methyl ester, ( $\beta\text{S},3\text{S}$ )- (9CI)  
(CA INDEX NAME)

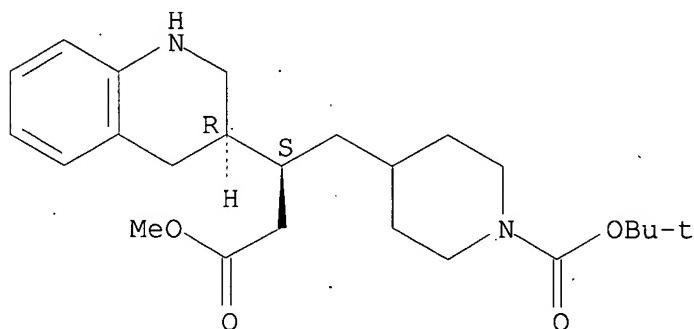
Absolute stereochemistry.



RN 791820-87-6 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]methyl]-1,2,3,4-tetrahydro-, methyl ester, ( $\beta\text{S},3\text{R}$ )- (9CI)  
(CA INDEX NAME)

Absolute stereochemistry.



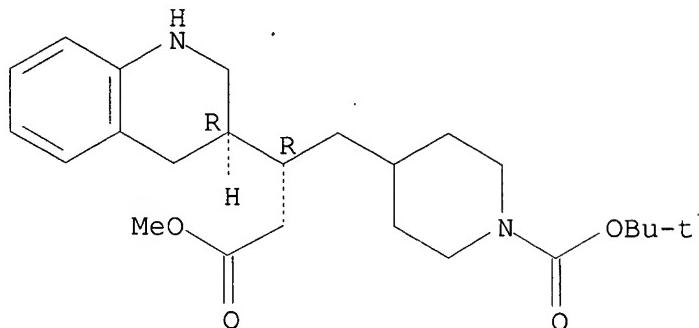
RN 791820-88-7 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]methyl]-1,2,3,4-tetrahydro-, methyl ester, ( $\beta\text{R},3\text{R}$ )- (9CI)

10/782,060

(CA INDEX NAME)

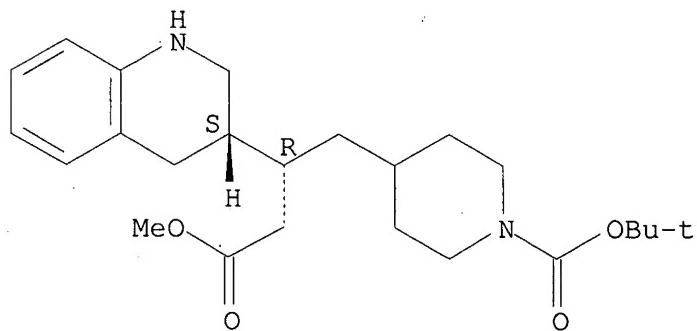
Absolute stereochemistry.



RN 791820-89-8 CAPLUS

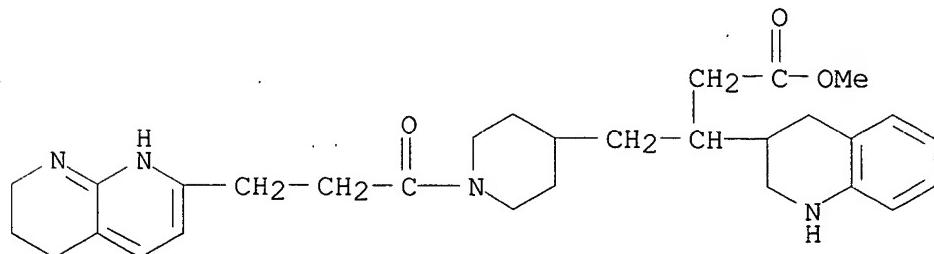
CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]methyl]-1,2,3,4-tetrahydro-, methyl ester, ( $\beta$ R,3S)- (9CI)  
(CA INDEX NAME)

Absolute stereochemistry.

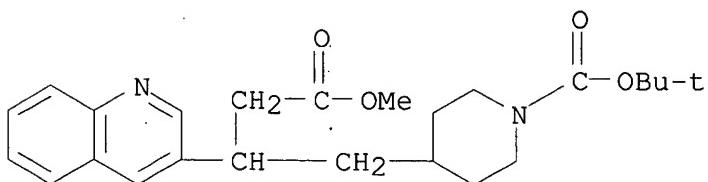


RN 791820-91-2 CAPLUS

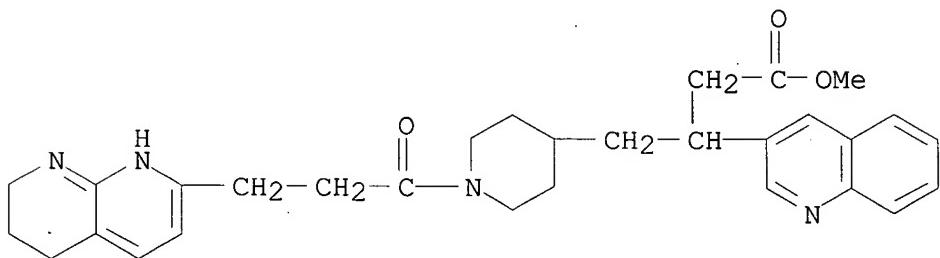
CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-, methyl ester (9CI) (CA INDEX NAME)



RN 811842-91-8 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]methyl]-, methyl ester (9CI) (CA INDEX NAME)

RN 852286-61-4 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-, methyl ester (9CI)  
(CA INDEX NAME)

IT 852201-06-0P 852201-07-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
RACT

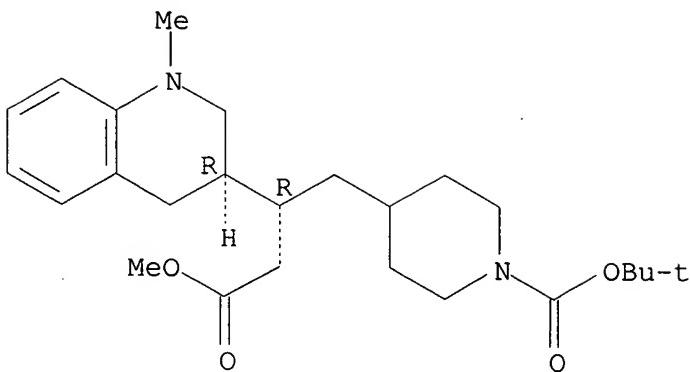
(Reactant or reagent)

(preparation of 1,2,3,4-tetrahydroquinolines as antagonists of  
vitronectinbinding to  $\alpha v\beta 3$  and  $\alpha v\beta 5$  and fibrinogen binding  
to  $\alpha IIb\beta 3$ )

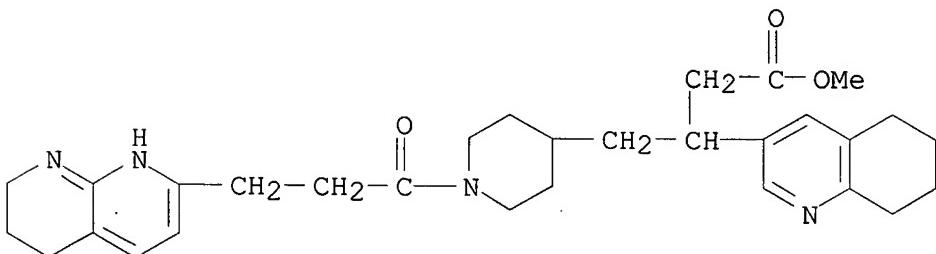
RN 852201-06-0 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]methyl]-1,2,3,4-tetrahydro-1-methyl-, methyl ester,  
( $\beta$ R,3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 852201-07-1 CAPLUS

CN 3-Quinolinepropanoic acid, 5,6,7,8-tetrahydro- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-, methyl ester (9CI) (CA INDEX NAME)AB Reduction of the quinoline ring in an  $\alpha\beta 3$  antagonist yielded a 1,2,3,4-tetrahydro derivative as two diastereomers, the four isomers of whichwere separated by sequential chiral HPLC. Two isomers had significant  $\alpha\beta 3$  antagonist activity with improved oral bioavailability, relative to the corresponding quinoline derivative

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS

FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L4 ANSWER 9 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN

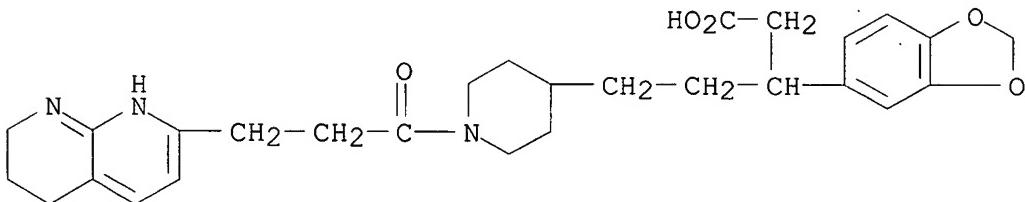
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DOCUMENT NUMBER: 141:410773

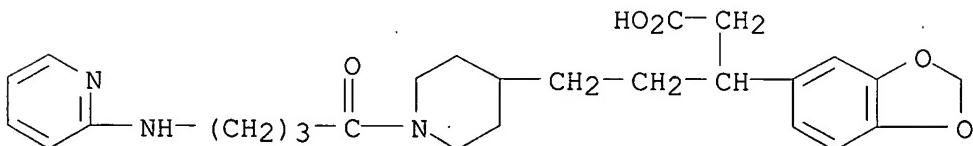
TITLE: Piperidine-containing  $\beta$ -arylpropionic acids as potent antagonists of  $\alpha\beta 3/\alpha\beta 5$  integrins

AUTHOR(S): De Corte, Bart L.; Kinney, William A.; Liu, Li; Ghosh, Shyamali; Brunner, Livia; Hoekstra, William J.; Santulli, Rosemary J.; Tuman, Robert W.; Baker,

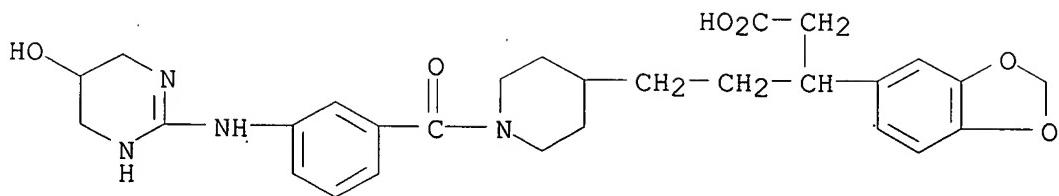
Brett Judith; Burns, Candace; Proost, Jef C.; Toungle,  
 Johnson, A.; Damiano, Bruce P.; Maryanoff, Bruce E.;  
 CORPORATE SOURCE: Dana L.; Galemmo, Robert A.  
 Drug Discovery, Johnson & Johnson Pharmaceutical  
 Research and Development, Spring House, PA,  
 19477-0776, USA  
 SOURCE: Bioorganic & Medicinal Chemistry Letters (2004),  
 14(20), 5227-5232  
 CODEN: BMCL8; ISSN: 0960-894X  
 PUBLISHER: Elsevier B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 141:410773  
 IT 669075-21-2P 669075-28-9P 669075-83-6P  
 RL: PAC (Pharmacological activity); PRP (Properties); SPN (Synthetic  
 preparation); BIOL (Biological study); PREP (Preparation)  
 (preparation  $\alpha\beta 3/\alpha IIb\beta 3$  integrin binding affinity,  
 pharmacokinetics, and structure-activity relationship of  
 $\beta$ -aryl(piperidinyl)pentanoic acids starting from  
 piperidinecarboxylic acid)  
 RN 669075-21-2 CAPLUS  
 CN 4-Piperidinepentanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-3-  
 (1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX  
 NAME)



RN 669075-28-9 CAPLUS  
 CN 4-Piperidinepentanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-4-(2-pyridinylamino)butyl]- (9CI) (CA INDEX NAME)



RN 669075-83-6 CAPLUS  
 CN 4-Piperidinepentanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]benzoyl]- (9CI) (CA INDEX NAME)



IT 791064-60-3P 791064-77-2P 791064-78-3P  
791064-79-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
RACT

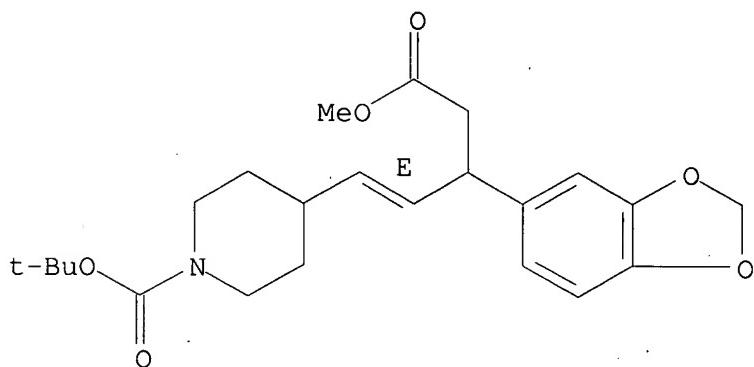
(Reactant or reagent)

(preparation  $\alpha\beta 3/\alpha II b \beta 3$  integrin binding affinity,  
pharmacokinetics, and structure-activity relationship of  
 $\beta$ -aryl(piperidinyl)pentanoic acids starting from  
piperidinecarboxylic acid)

RN 791064-60-3 CAPPLUS

CN 1-Piperidinecarboxylic acid,  
4-[ (1E)-3-(1,3-benzodioxol-5-yl)-5-methoxy-5-  
oxo-1-pentenyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

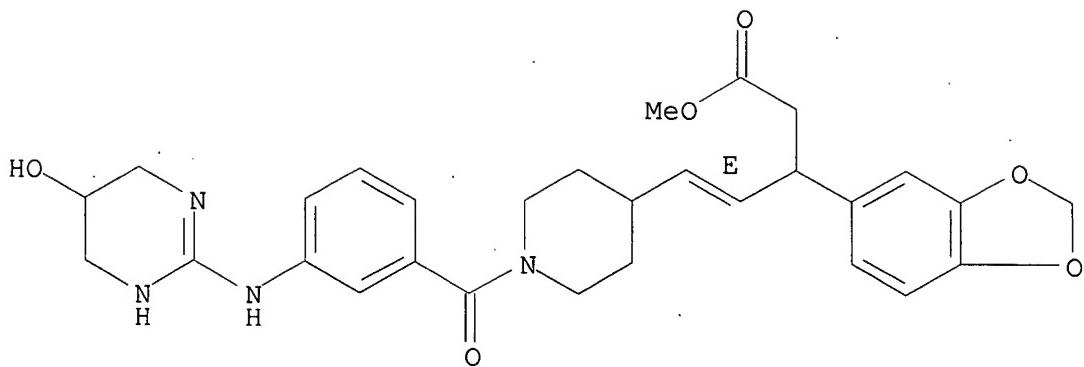
Double bond geometry as shown.



RN 791064-77-2 CAPPLUS

CN 1,3-Benzodioxole-5-propanoic acid,  $\beta$ -[ (1E)-2-[1-[3-[ (1,4,5,6-  
tetrahydro-5-hydroxy-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethenyl]-,  
methyl ester (9CI) (CA INDEX NAME)

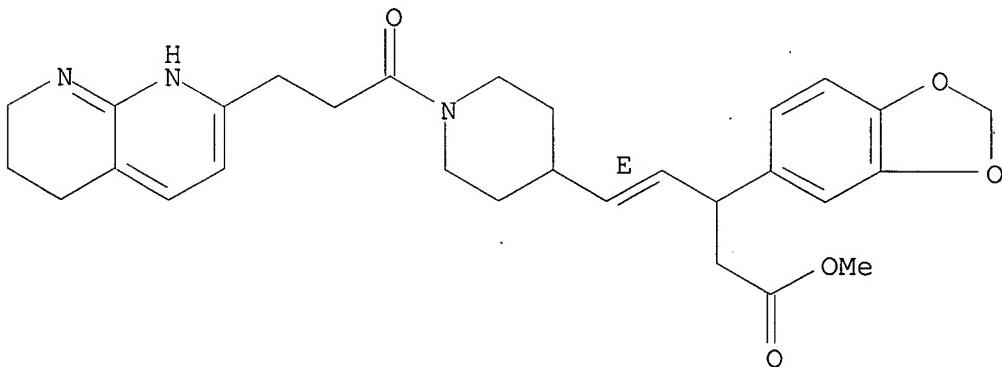
Double bond geometry as shown.



RN 791064-78-3 CAPLUS

CN 1,3-Benzodioxole-5-propanoic acid,  $\beta$ -[(1E)-2-[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]ethenyl]-, methyl ester (9CI) (CA INDEX NAME)

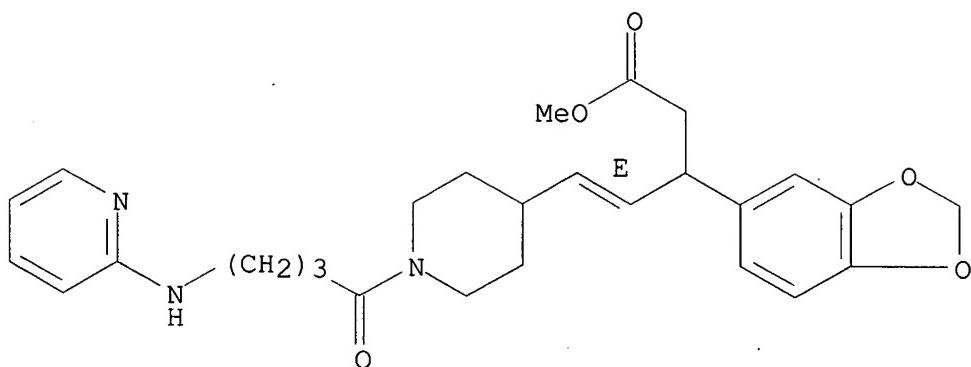
Double bond geometry as shown.



RN 791064-79-4 CAPLUS

CN 1,3-Benzodioxole-5-propanoic acid,  $\beta$ -[(1E)-2-[1-[1-oxo-4-(2-pyridinylamino)butyl]-4-piperidinyl]ethenyl]-, methyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

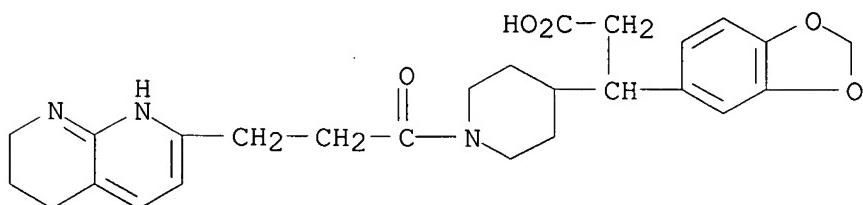


IT 669075-00-7P 669075-01-8P 669075-02-9P  
 669075-40-5P 669075-48-3P 669075-51-8P  
 669075-56-3P 669075-66-5P 669075-68-7P  
 669075-84-7P 669075-93-8P

RL: PAC (Pharmacological activity); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)  
 (preparation  $\alpha\beta3/\alpha\text{IIb}\beta3/\alpha\beta5$  integrin binding affinity, and structure-activity relationship of  $\beta$ -aryl(pyridinyl)alkanoic acids starting from piperidinylalkanoic acids)

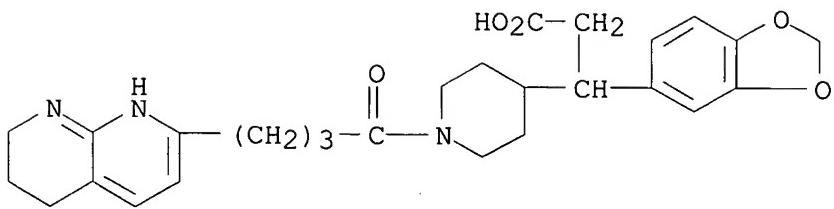
RN 669075-00-7 CAPLUS

CN 4-Piperidinepropanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



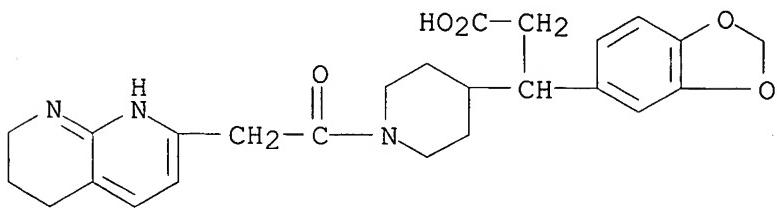
RN 669075-01-8 CAPLUS

CN 4-Piperidinepropanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]- (9CI) (CA INDEX NAME)



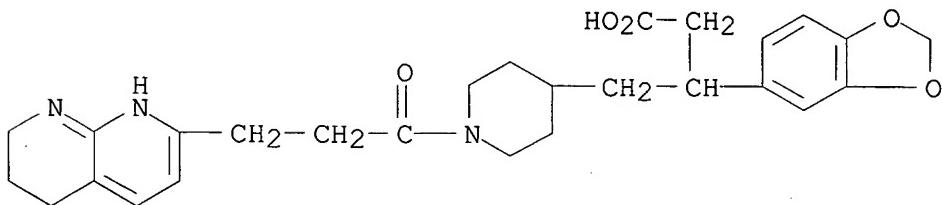
RN 669075-02-9 CAPLUS

CN 4-Piperidinepropanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)acetyl]- (9CI) (CA INDEX NAME)



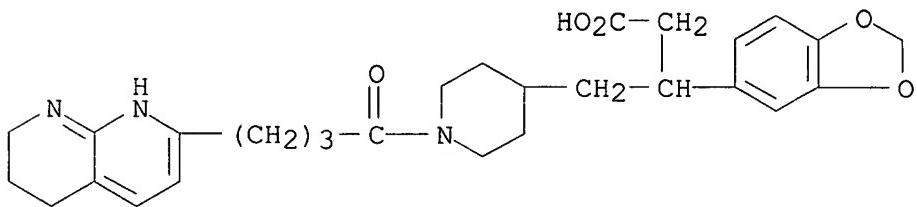
RN 669075-40-5 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



RN 669075-48-3 CAPLUS

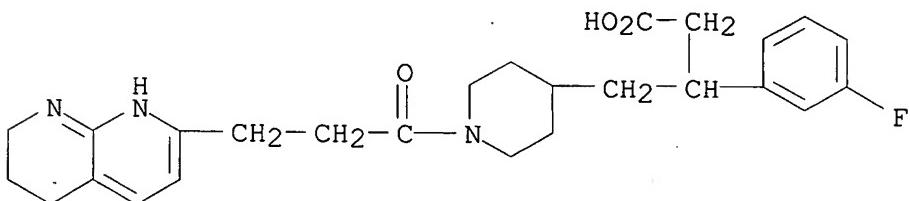
CN 4-Piperidinebutanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]- (9CI) (CA INDEX NAME)



10/782,060

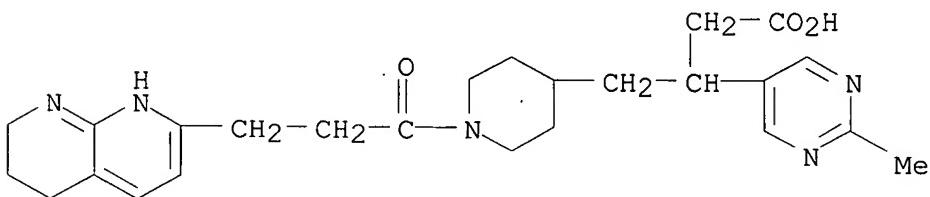
RN 669075-51-8 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(3-fluorophenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



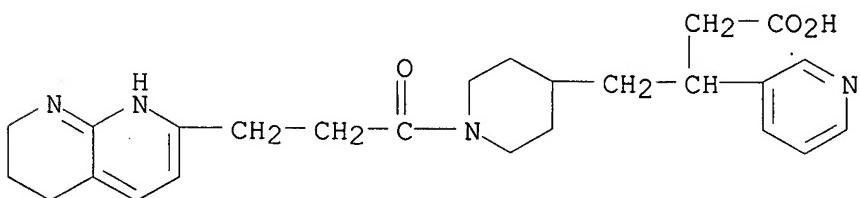
RN 669075-56-3 CAPLUS

CN 5-Pyrimidinopropanoic acid, 2-methyl- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI)  
(CA INDEX NAME)



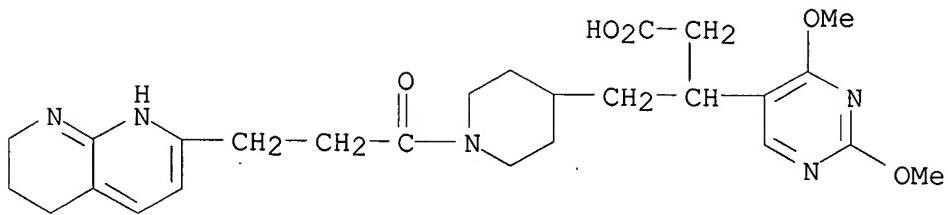
RN 669075-66-5 CAPLUS

CN 3-Pyridinopropanoic acid,  $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI) (CA INDEX NAME)



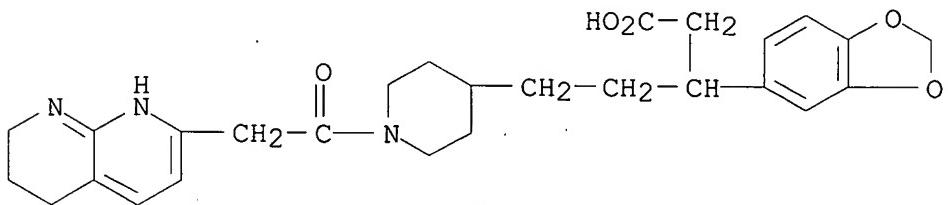
RN 669075-68-7 CAPLUS

CN 5-Pyrimidinopropanoic acid, 2,4-dimethoxy- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI)  
(CA INDEX NAME)



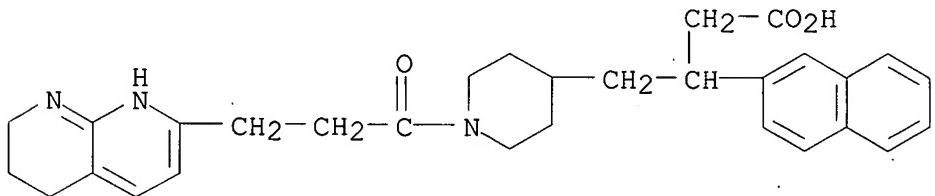
RN 669075-84-7 CAPLUS

CN 4-Piperidinepentanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)acetyl]- (9CI) (CA INDEX NAME)

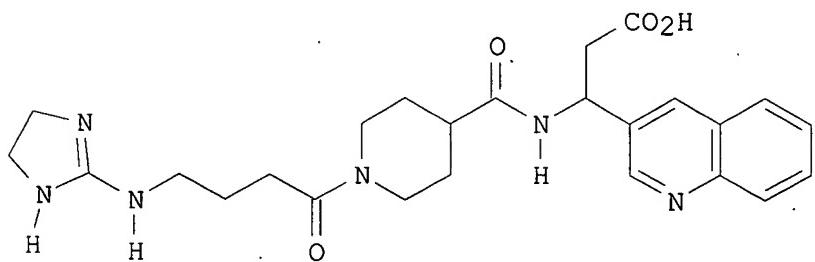


RN 669075-93-8 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -2-naphthalenyl-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



GI



AB The synthesis and SAR of a class of piperidine-based

$\alpha v\beta 3/\alpha v\beta 5$  integrin antagonists, e.g., I, is described. Replacement of an amide bond in a prototype isonipeptamide by a C-C isostere, and adjustment of the spacer length between the carboxylic acid and basic moieties, led to low nanomolar antagonists of  $\alpha v\beta 3$  and/or  $\alpha v\beta 5$  integrins with excellent selectivity vs.  $\alpha IIb\beta 3$ .

REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

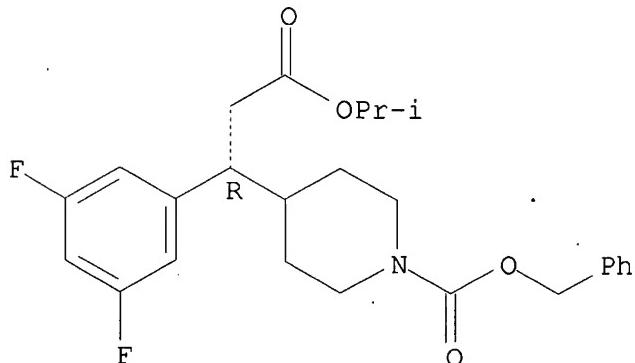
L4 ANSWER 10 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:546479 CAPLUS  
 DOCUMENT NUMBER: 141:106374  
 TITLE: A preparation of novel piperidine derivatives as modulators of chemokine receptor CCR5  
 INVENTOR(S): Cumming, John; Faull, Alan; Fielding, Colin;  
 Oldfield,  
 John; Tucker, Howard  
 PATENT ASSIGNEE(S): Astrazeneca AB, Swed.  
 SOURCE: PCT Int. Appl., 118 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004056773	A1	20040708	WO 2003-SE2008	20031218
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN,				
TD, TG				
CA 2508624	A1	20040708	CA 2003-2508624	20031218
AU 2003288856	A1	20040714	AU 2003-288856	20031218
EP 1572650	A1	20050914	EP 2003-781235	20031218
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
BR 2003017459	A	20051116	BR 2003-17459	20031218
CN 1732153	A	20060208	CN 2003-80107833	20031218
JP 2006514107	T	20060427	JP 2005-502630	20031218
US 2006189650	A1	20060824	US 2005-539859	20050617

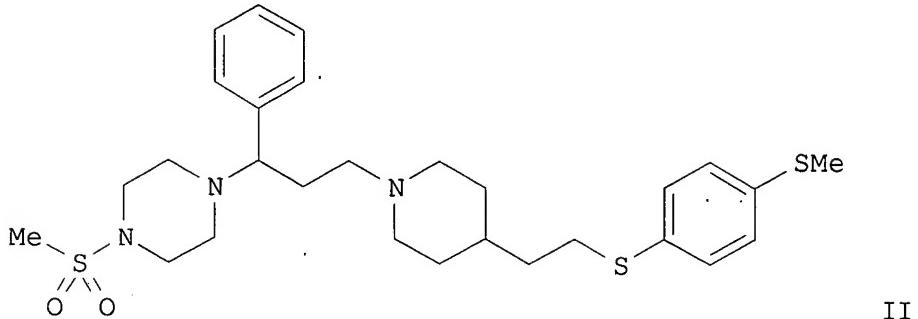
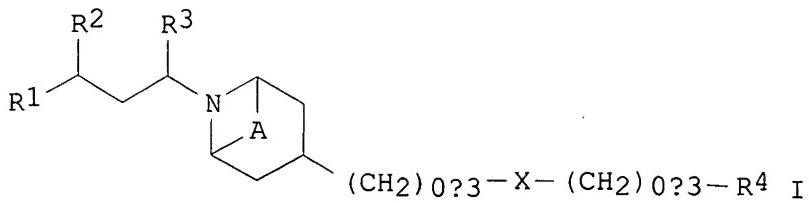
NO 2005003539 PRIORITY APPLN. INFO.:	A 20050920	NO 2005-3539 SE 2002-3821	20050719 A 20021220
		SE 2003-499	A 20030224
		SE 2003-1425	A 20030515
		WO 2003-SE2008	W 20031218

OTHER SOURCE(S): MARPAT 141:106374  
 IT 718610-71-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
 RACT  
 (Reactant or reagent)  
 (preparation of novel piperidine derivs. as modulators of chemokine  
 receptor  
 ccr5)  
 RN 718610-71-0 CAPLUS  
 CN 4-Piperidinopropanoic acid,  $\beta$ -(3,5-difluorophenyl)-1-[  
 (phenylmethoxy)carbonyl]-, 1-methylethyl ester, ( $\beta$ R)- (9CI) (CA  
 INDEX NAME)

Absolute stereochemistry.



GI



AB The invention relates to a preparation of novel piperidine derivs. of formula I  
 [wherein: A is absent or  $(\text{CH}_2)_2$ ; R1 is alkyl,  $\text{C}(\text{O})\text{NH}$ -alkyl, or  $\text{CO}_2$ -alkyl,  
 etc.; R2 is alkyl, Ph, heteroaryl, or cycloalkyl; R3 is H or alkyl; R4 is  
 (hetero)aryl or (cyclo)alkyl; X is O or  $\text{S}(\text{O})_0-2$ ], useful as modulators  
 of chemokine receptor CCR5. The invention compds. are claimed to be  
 useful for the treatment of CCR5-mediated diseases such as autoimmune,  
 inflammatory, or proliferative diseases. The invented compds. are  
 also of value in inhibiting the entry of viruses (such as HIV) into target  
 cells (no biol. data). The ability of the invention compds. to inhibit the  
 binding of RANTES and MIP-1 $\alpha$  was assessed (certain compds. of  
 formula I have  $\text{IC}_{50} < 50 \mu\text{M}$ ). For instance,  $\text{Pic}_{50}$  (neg. log of the  
 $\text{IC}_{50}$  result) for piperidine derivative II was determined as 6.91  
 (table XV).

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L4 ANSWER 11 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:203829 CAPLUS  
 DOCUMENT NUMBER: 140:253451  
 TITLE: Piperidinyl compounds that selectively bind  
 integrins

10/782,060

INVENTOR(S): De Corte, Bart; Kinney, William A.; Maryanoff, Bruce  
E.; Ghosh, Shyamali; Liu, Li  
PATENT ASSIGNEE(S): Janssen Pharmaceutica N.V., Belg.  
SOURCE: PCT Int. Appl., 184 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004020435	A1	20040311	WO 2003-US25782	20030815
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003259891	A1	20040319	AU 2003-259891	20030815
CA 2496127	A1	20050216	CA 2003-2496127	20030815
EP 1539739	A1	20050615	EP 2003-791686	20030815
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
BR 2003013534	A	20050712	BR 2003-13534	20030815
CN 1688572	A	20051026	CN 2003-824090	20030815
JP 2005539049	T	20051222	JP 2004-532905	20030815
NO 2005001273	A	20050510	NO 2005-1273	20050311
IN 2005KN00434	A	20060303	IN 2005-KN434	20050316
PRIORITY APPLN. INFO.:			US 2002-404239P	P 20020816
			WO 2003-US25782	W 20030815

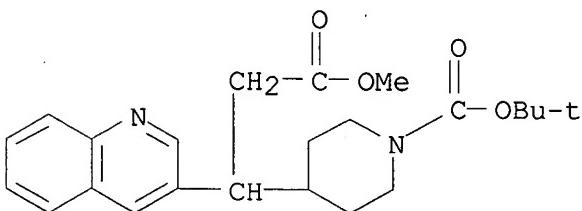
OTHER SOURCE(S): MARPAT 140:253451  
IT 669074-91-3P 669074-96-8P 669074-99-1P  
669075-05-2P 669075-08-5P 669075-14-3P  
669075-16-5P 669075-18-7P 669075-20-1P  
669075-26-7P 669075-33-6P 669075-35-8P  
669075-44-9P 669075-47-2P 669075-75-6P  
669075-76-7P 669075-79-0P 669075-88-1P  
669075-92-7P 669076-23-7P 669076-28-2P  
669076-34-0P 669076-37-3P 669076-41-9P  
669076-44-2P 669076-49-7P 669076-54-4P  
669076-74-8P 669076-76-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
RACT  
(Reactant or reagent)

(intermediate; preparation of piperidinyl derivs. useful as  $\alpha v\beta 3$  and  $\alpha v\beta 5$  integrin receptor antagonists)

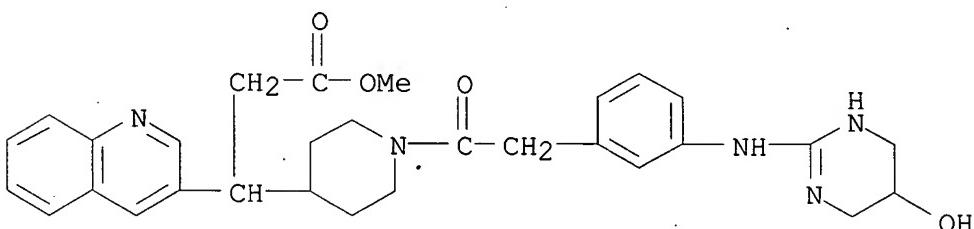
RN 669074-91-3 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]-, methyl ester (9CI) (CA INDEX NAME)



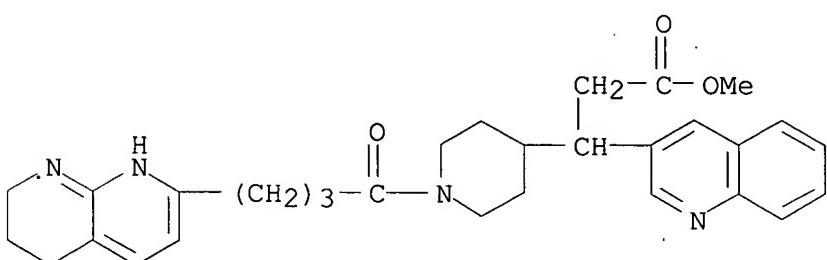
RN 669074-96-8 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[1-[[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]phenyl]acetyl]-4-piperidinyl]-, methyl ester (9CI)  
(CA INDEX NAME)



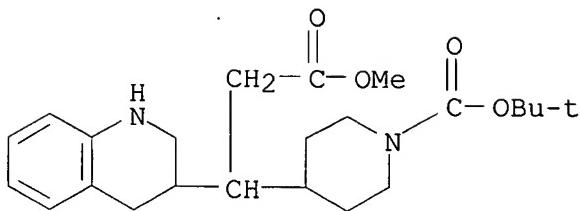
RN 669074-99-1 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]-, methyl ester (9CI) (CA INDEX NAME)



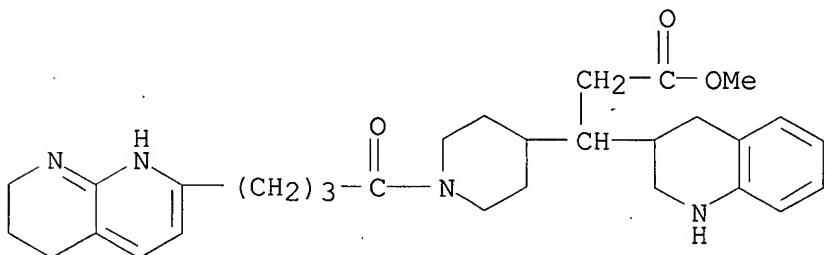
RN 669075-05-2 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]-1,2,3,4-tetrahydro-, methyl ester (9CI) (CA INDEX NAME)



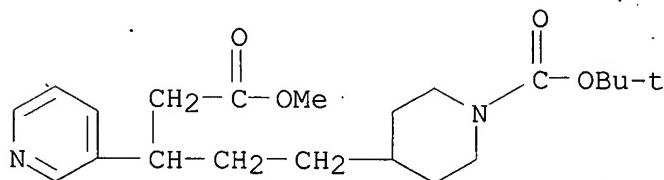
RN 669075-08-5 CAPLUS

CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro-β-[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]-, methyl ester (9CI) (CA INDEX NAME)



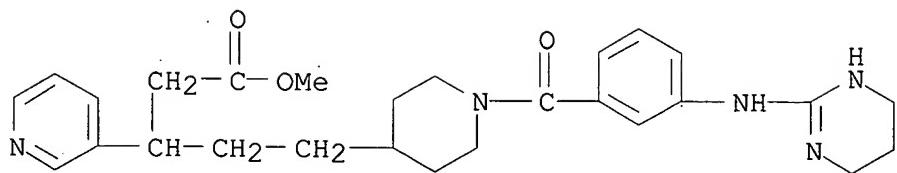
RN 669075-14-3 CAPLUS

CN 3-Pyridinepropanoic acid, β-[2-[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]ethyl]-, methyl ester (9CI) (CA INDEX NAME)



RN 669075-16-5 CAPLUS

CN 3-Pyridinepropanoic acid, β-[2-[1-[3-[(1,4,5,6-tetrahydro-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]-, methyl ester (9CI)  
(CA INDEX NAME)

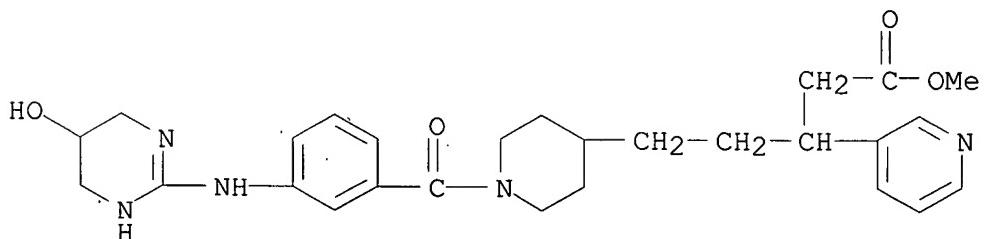


RN 669075-18-7 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]-, methyl ester (9CI)

(CA

INDEX NAME)

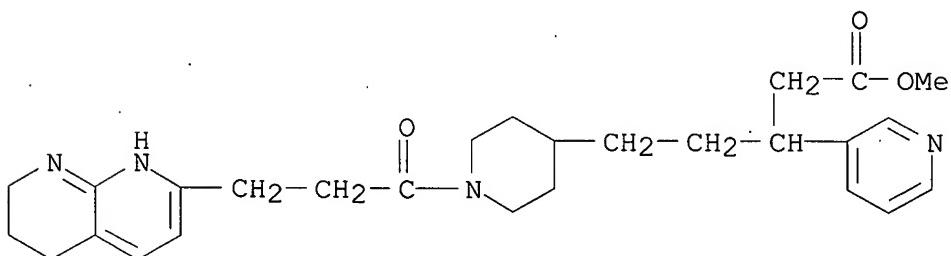


RN 669075-20-1 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]ethyl]-, methyl ester (9CI)

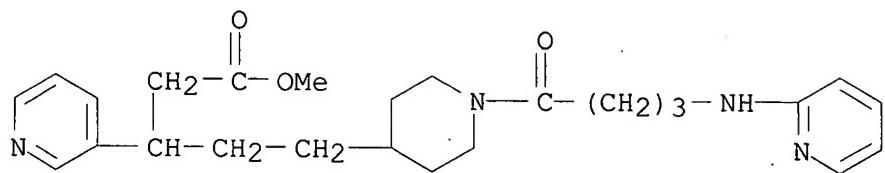
(CA

INDEX NAME)



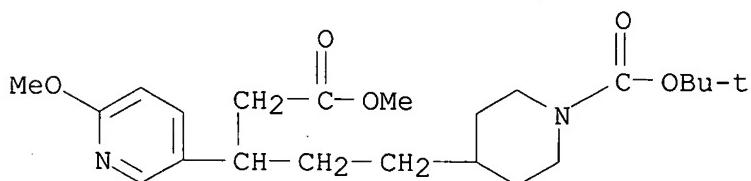
RN 669075-26-7 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[1-oxo-4-(2-pyridinylamino)butyl]-4-piperidinyl]ethyl]-, methyl ester (9CI) (CA INDEX NAME)



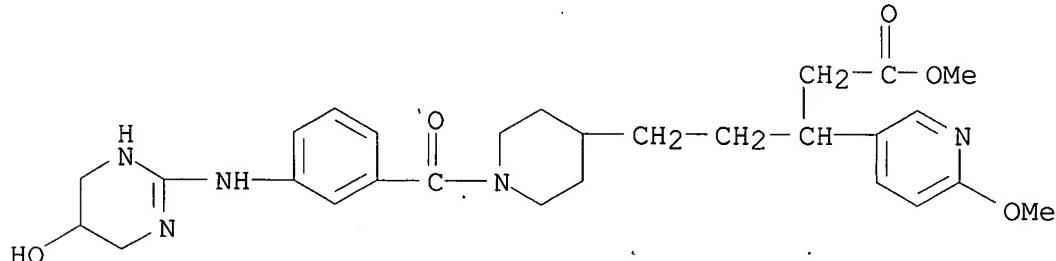
RN 669075-33-6 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]ethyl]-6-methoxy-, methyl ester (9CI) (CA INDEX NAME)



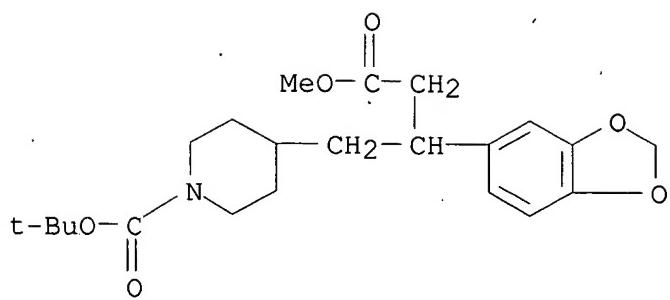
RN 669075-35-8 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy- $\beta$ -[2-[1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]-, methyl ester (9CI) (CA INDEX NAME)



RN 669075-44-9 CAPLUS

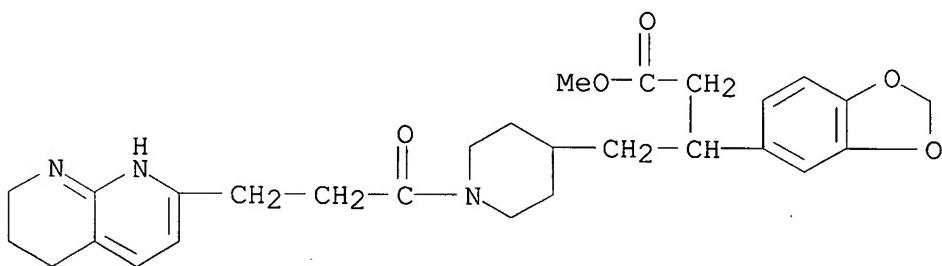
CN 4-Piperidinebutanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[(1,1-dimethylethoxy)carbonyl]-, methyl ester (9CI) (CA INDEX NAME)



RN 669075-47-2 CAPLUS

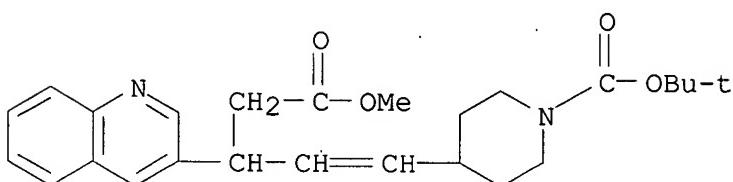
CN 4-Piperidinebutanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, methyl ester (9CI) (CA INDEX NAME)

NAME)



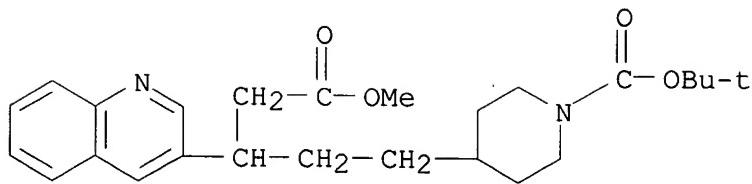
RN 669075-75-6 CAPLUS

CN 3-Quinolinesopropanoic acid,  $\beta$ -[2-[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]ethenyl]-, methyl ester (9CI) (CA INDEX NAME)



RN 669075-76-7 CAPLUS

CN 3-Quinolinesopropanoic acid,  $\beta$ -[2-[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]ethyl]-, methyl ester (9CI) (CA INDEX NAME)

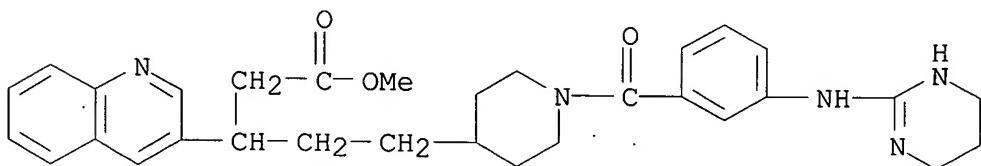


RN 669075-79-0 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[2-[1-[3-[(1,4,5,6-tetrahydro-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]-, methyl ester (9CI)

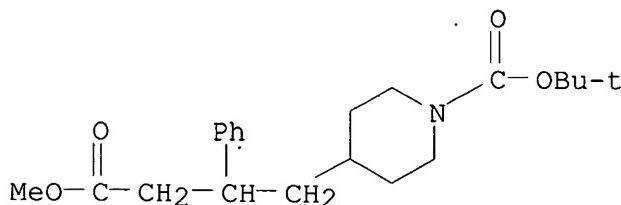
(CA

INDEX NAME)



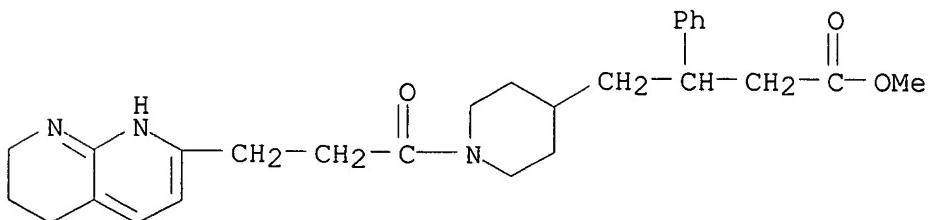
RN 669075-88-1 CAPLUS

CN 4-Piperidinebutanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]- $\beta$ -phenyl-, methyl ester (9CI) (CA INDEX NAME)



RN 669075-92-7 CAPLUS

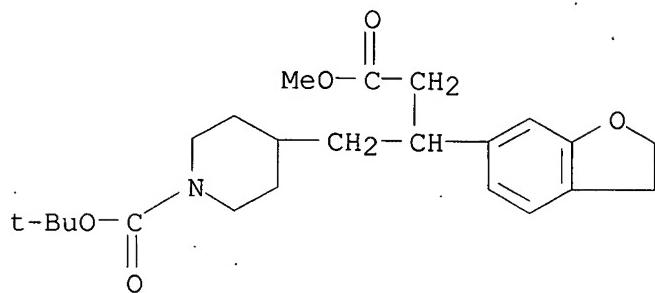
CN 4-Piperidinebutanoic acid,  
1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-  
2-yl)propyl]- $\beta$ -phenyl-, methyl ester (9CI) (CA INDEX NAME)



10/782,060

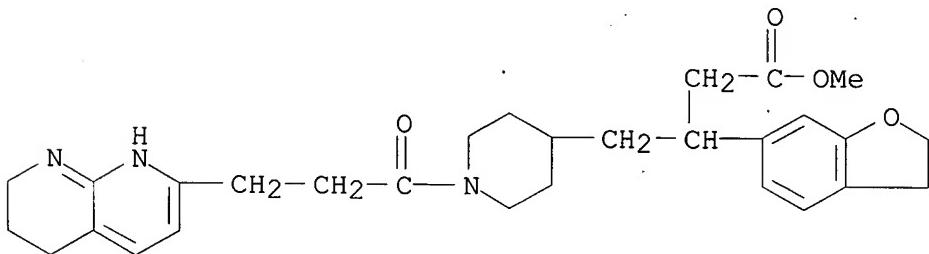
RN 669076-23-7 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(2,3-dihydro-6-benzofuranyl)-1-[(1,1-dimethylethoxy)carbonyl]-, methyl ester (9CI) (CA INDEX NAME)



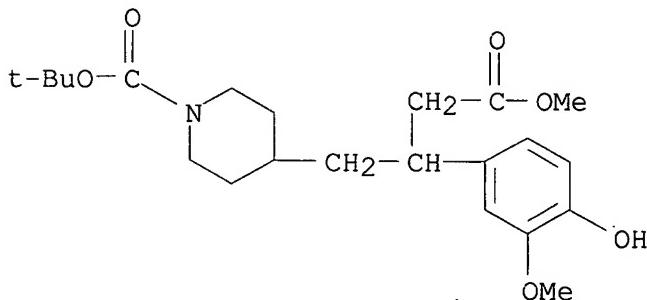
RN 669076-28-2 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(2,3-dihydro-6-benzofuranyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, methyl ester (9CI) (CA INDEX NAME)



RN 669076-34-0 CAPLUS

CN 4-Piperidinebutanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]- $\beta$ -(4-hydroxy-3-methoxyphenyl)-, methyl ester (9CI) (CA INDEX NAME)

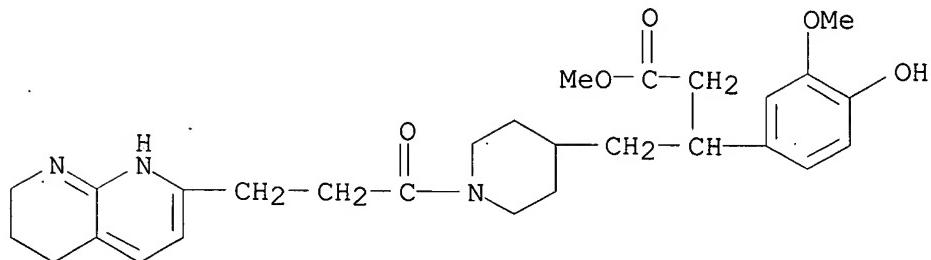


RN 669076-37-3 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(4-hydroxy-3-methoxyphenyl)-1-[1-oxo-3-

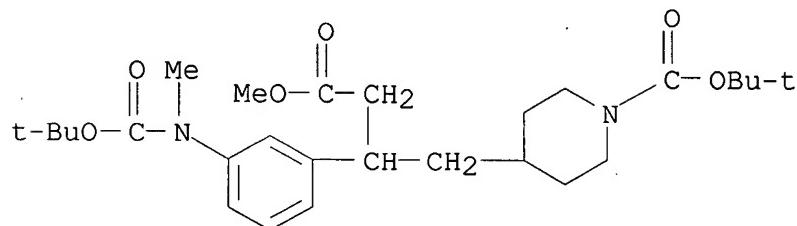
10/782,060

(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl-, methyl ester (9CI)  
(CA INDEX NAME)



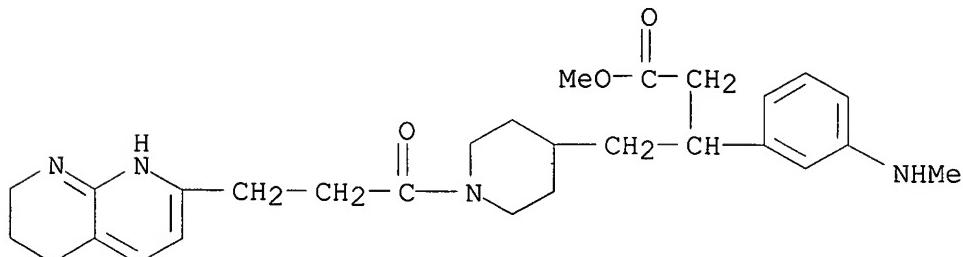
RN 669076-41-9 CAPLUS

CN 4-Piperidinebutanoic acid, 1-[{(1,1-dimethylethoxy)carbonyl]-β-[3-  
[(1,1-dimethylethoxy)carbonyl]methylamino]phenyl]-, methyl ester (9CI)  
(CA INDEX NAME)



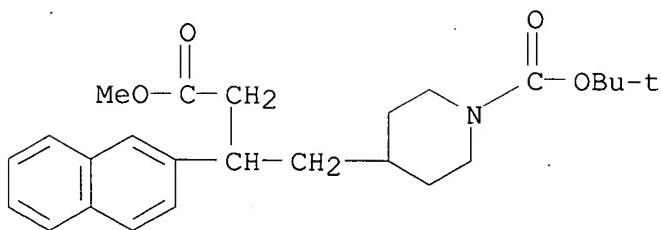
RN 669076-44-2 CAPLUS

CN 4-Piperidinebutanoic acid, β-[3-(methylamino)phenyl]-1-[1-oxo-3-  
(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, methyl ester (9CI)  
(CA INDEX NAME)



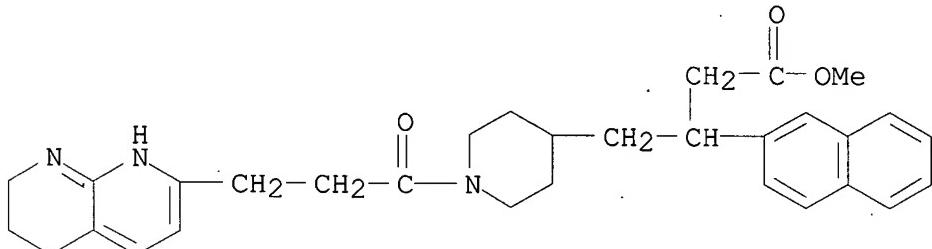
RN 669076-49-7 CAPLUS

CN 4-Piperidinebutanoic acid, 1-[{(1,1-dimethylethoxy)carbonyl]-β-2-  
naphthalenyl-, methyl ester (9CI) (CA INDEX NAME)



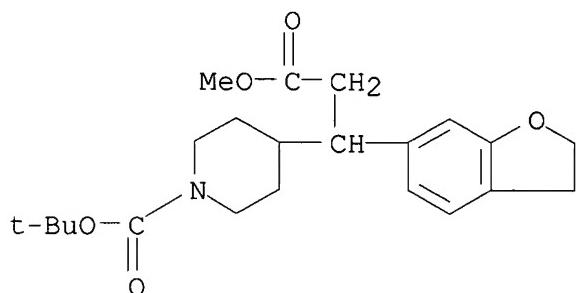
RN 669076-54-4 CAPLUS

CN 4-Piperidinobutanoic acid,  $\beta$ -2-naphthalenyl-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, methyl ester (9CI) (CA INDEX NAME)



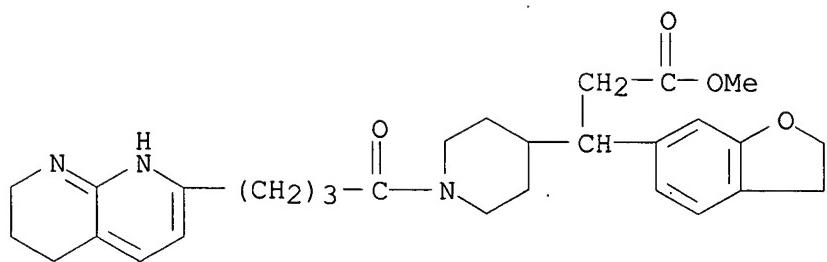
RN 669076-74-8 CAPLUS

CN 4-Piperidinopropanoic acid,  $\beta$ -(2,3-dihydro-6-benzofuranyl)-1-[(1,1-dimethylethoxy)carbonyl]-, methyl ester (9CI) (CA INDEX NAME)



RN 669076-76-0 CAPLUS

CN 4-Piperidinopropanoic acid,  $\beta$ -(2,3-dihydro-6-benzofuranyl)-1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-, methyl ester (9CI) (CA INDEX NAME)



IT 669076-68-0P 669076-69-1P

RL: PAC (Pharmacological activity); PUR (Purification or recovery); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study);

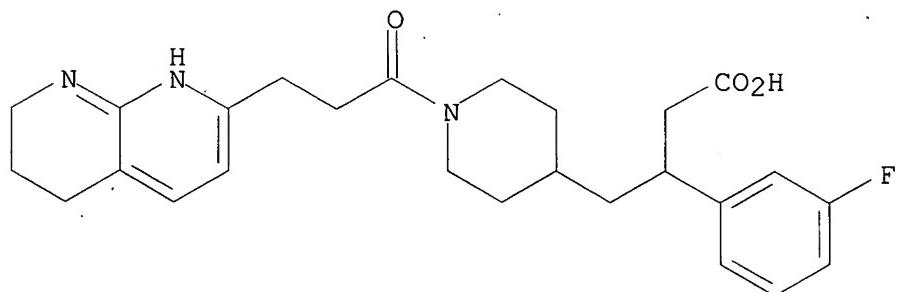
PREP (Preparation); USES (Uses)

(preparation of piperidinyl derivs. useful as  $\alpha v\beta 3$  and  $\alpha v\beta 5$  integrin receptor antagonists)

RN 669076-68-0 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(3-fluorophenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, (+)- (9CI) (CA INDEX NAME)

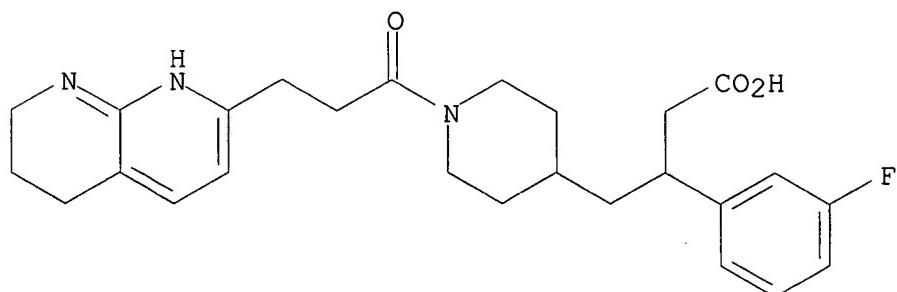
Rotation (+).



RN 669076-69-1 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(3-fluorophenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, (-)- (9CI) (CA INDEX NAME)

Rotation (-).



IT 669074-97-9P 669074-98-0P 669075-00-7P  
669075-01-8P 669075-02-9P 669075-03-0P  
669075-04-1P 669075-09-6P 669075-10-9P  
669075-11-0P 669075-12-1P 669075-17-6P  
669075-19-8P 669075-21-2P 669075-22-3P  
669075-23-4P 669075-24-5P 669075-27-8P  
669075-28-9P 669075-29-0P 669075-30-3P  
669075-31-4P 669075-38-1P 669075-39-2P  
669075-40-5P 669075-41-6P 669075-48-3P  
669075-49-4P 669075-50-7P 669075-51-8P  
669075-52-9P 669075-53-0P 669075-54-1P  
669075-55-2P 669075-56-3P 669075-57-4P  
669075-58-5P 669075-59-6P 669075-60-9P  
669075-61-0P 669075-62-1P 669075-63-2P  
669075-64-3P 669075-65-4P 669075-66-5P  
669075-67-6P 669075-68-7P 669075-69-8P  
669075-70-1P 669075-71-2P 669075-80-3P  
669075-81-4P 669075-82-5P 669075-83-6P  
669075-84-7P 669075-85-8P 669075-86-9P  
669075-93-8P 669076-01-1P 669076-02-2P  
669076-03-3P 669076-04-4P 669076-05-5P  
669076-06-6P 669076-07-7P 669076-08-8P  
669076-20-4P 669076-29-3P 669076-30-6P  
669076-38-4P 669076-45-3P 669076-46-4P  
669076-55-5P 669076-70-4P 669076-78-2P  
669076-79-3P 669076-80-6P 669076-81-7P  
669076-82-8P 669076-83-9P 669076-84-0P  
669076-85-1P 669076-86-2P 669076-87-3P  
669076-88-4P 669076-89-5P 669076-90-8P  
669076-91-9P 669076-92-0P 669076-93-1P  
669076-94-2P 669076-96-4P 669076-97-5P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

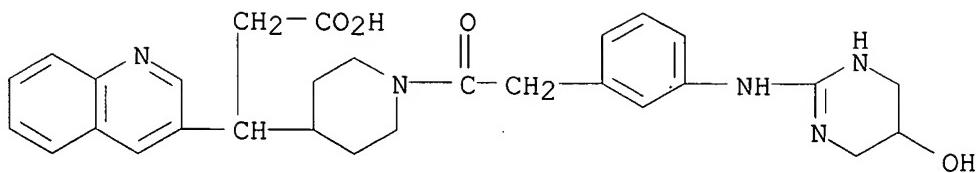
(preparation of piperidinyl derivs. useful as  $\alpha v\beta 3$  and  $\alpha v\beta 5$  integrin receptor antagonists)

RN 669074-97-9 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[1-[[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]phenyl]acetyl]-4-piperidinyl]-, monohydrochloride

(9CI)

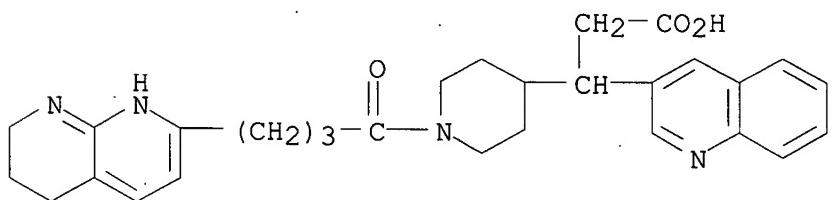
(CA INDEX NAME)



● HCl

RN 669074-98-0 CAPLUS

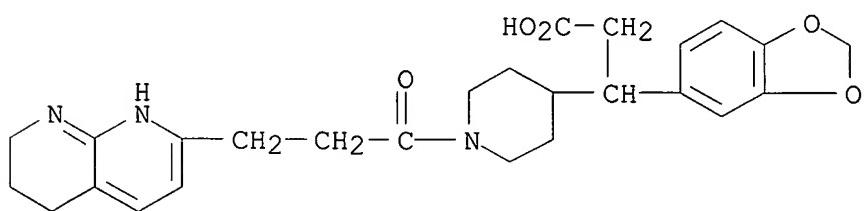
CN 3-Quinolinepropanoic acid,  $\beta$ -[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]-, hydrochloride (2:7) (9CI)  
(CA INDEX NAME)



● 7/2 HCl

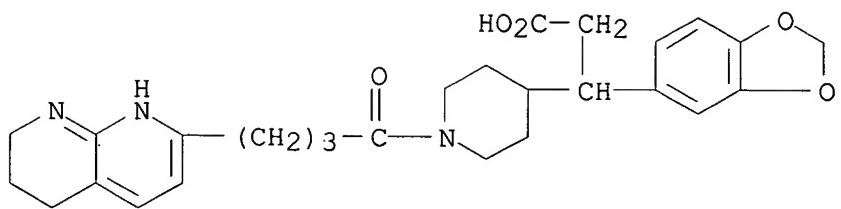
RN 669075-00-7 CAPLUS

CN 4-Piperidinepropanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



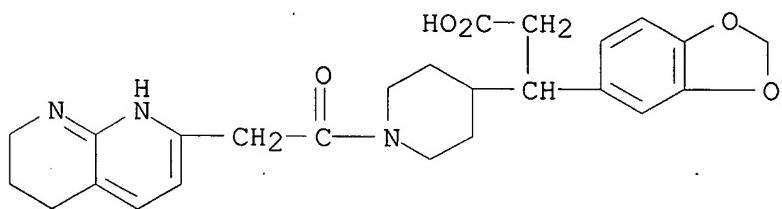
RN 669075-01-8 CAPLUS

CN 4-Piperidinepropanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]- (9CI) (CA INDEX NAME)



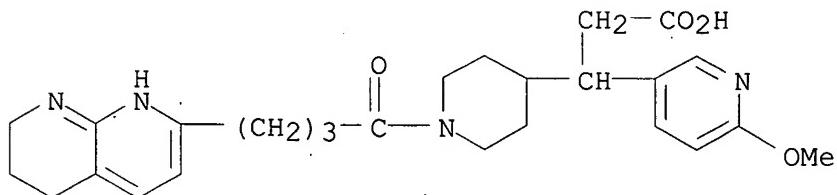
RN 669075-02-9 CAPLUS

CN 4-Piperidinopropanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)acetyl]- (9CI) (CA INDEX NAME)



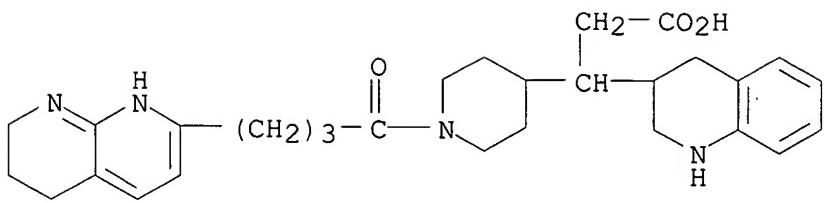
RN 669075-03-0 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy- $\beta$ -[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]- (9CI) (CA INDEX NAME)



RN 669075-04-1 CAPLUS

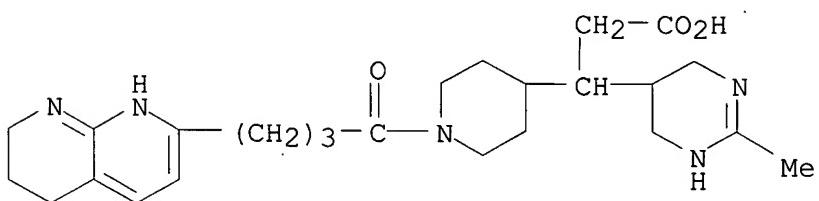
CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro- $\beta$ -[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]-, monohydrochloride (9CI) (CA INDEX NAME)



● HCl

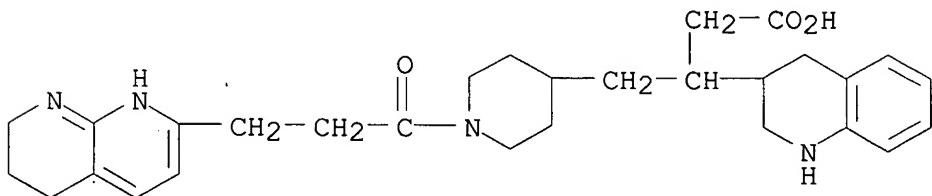
RN 669075-09-6 CAPLUS

CN 5-Pyrimidinepropanoic acid, 1,4,5,6-tetrahydro-2-methyl- $\beta$ -[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]-(9CI)  
(CA INDEX NAME)



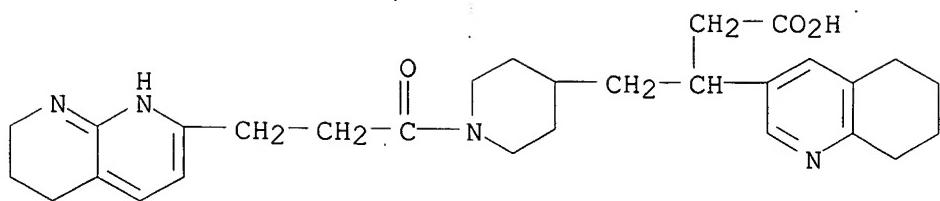
RN 669075-10-9 CAPLUS

CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-(9CI)  
(CA INDEX NAME)



RN 669075-11-0 CAPLUS

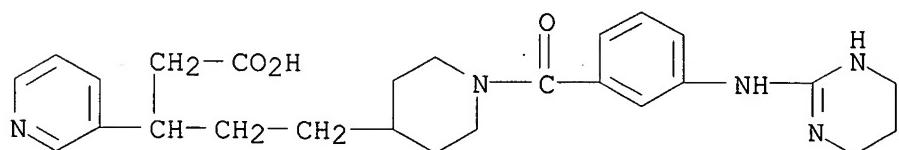
CN 3-Quinolinepropanoic acid, 5,6,7,8-tetrahydro- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-(9CI)  
(CA INDEX NAME)



RN 669075-12-1 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[3-[(1,4,5,6-tetrahydro-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]-, monohydrochloride  
(9CI)

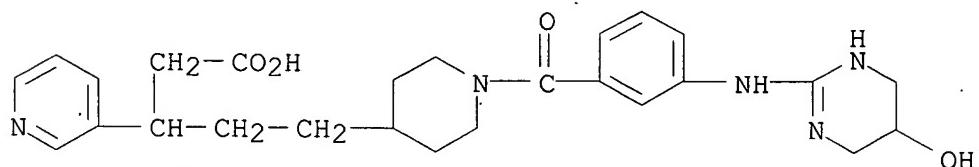
(CA INDEX NAME)



● HCl

RN 669075-17-6 CAPLUS

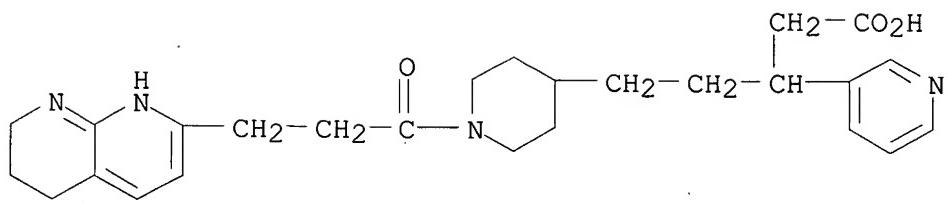
CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



RN 669075-19-8 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]ethyl]-, monohydrochloride  
(9CI)

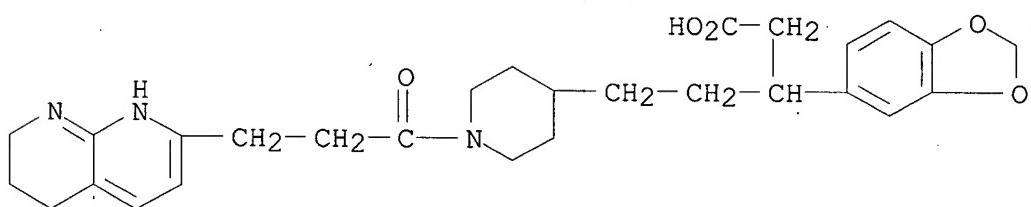
(CA INDEX NAME)



● HCl

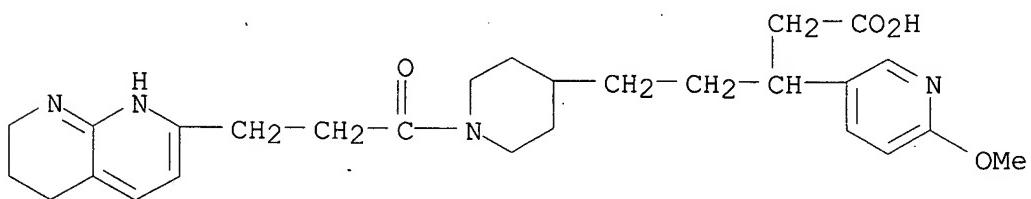
RN 669075-21-2 CAPLUS

CN 4-Piperidinepentanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



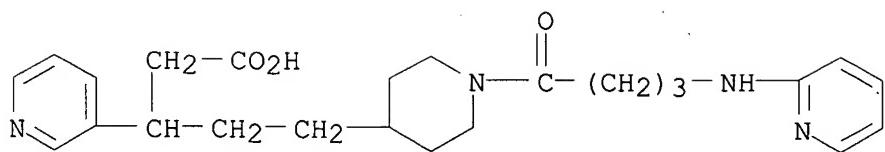
RN 669075-22-3 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy- $\beta$ -[2-[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



RN 669075-23-4 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[1-oxo-4-(2-pyridinylamino)butyl]-4-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



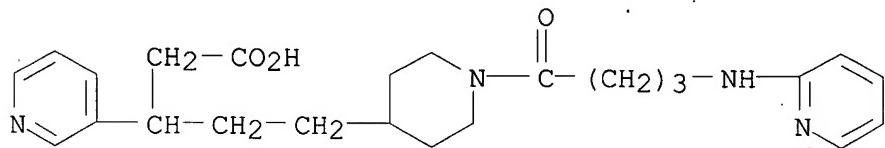
RN 669075-24-5 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[1-oxo-4-(2-pyridinylamino)butyl]-4-piperidinyl]ethyl]-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 669075-23-4

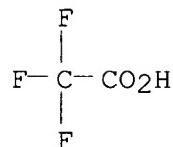
CMF C24 H32 N4 O3



CM 2

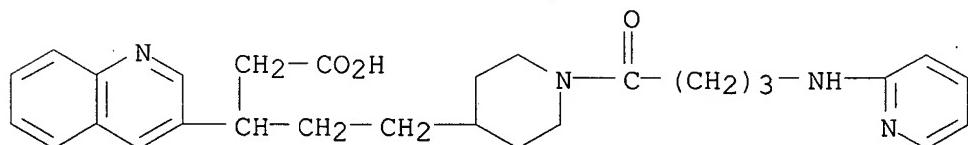
CRN 76-05-1

CMF C2 H F3 O2



RN 669075-27-8 CAPLUS

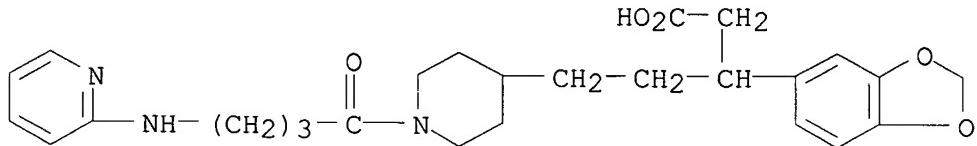
CN 3-Quinolinepropanoic acid,  $\beta$ -[2-[1-[1-oxo-4-(2-pyridinylamino)butyl]-4-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



RN 669075-28-9 CAPLUS

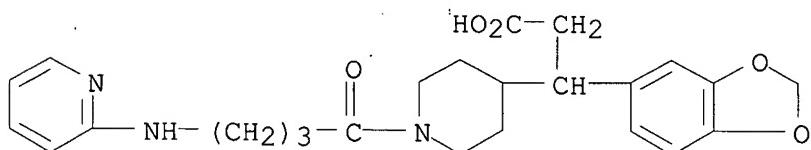
10/782,060

CN 4-Piperidinpentanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-4-(2-pyridinylamino)butyl]- (9CI) (CA INDEX NAME)



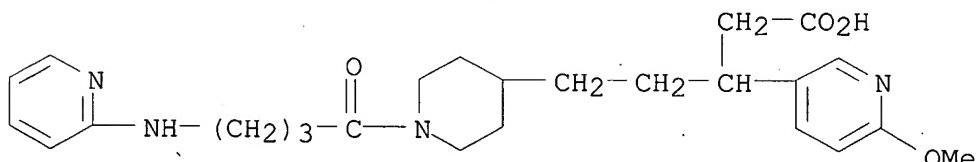
RN 669075-29-0 CAPLUS

CN 4-Piperidinepropanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-4-(2-pyridinylamino)butyl]- (9CI) (CA INDEX NAME)



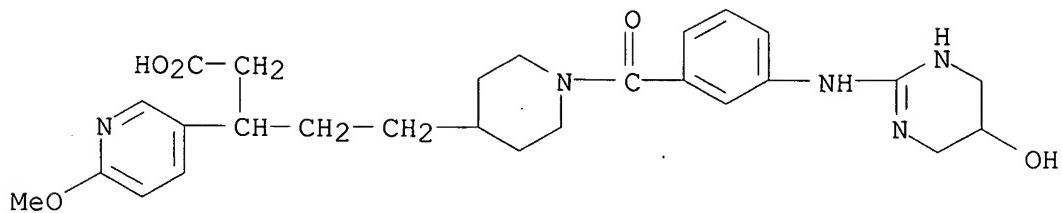
RN 669075-30-3 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy- $\beta$ -[2-[1-[1-oxo-4-(2-pyridinylamino)butyl]-4-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



RN 669075-31-4 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy- $\beta$ -[2-[1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]-, monohydrochloride (9CI) (CA INDEX NAME)

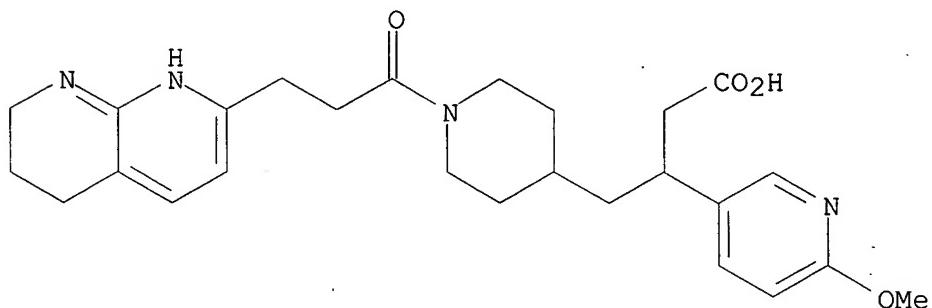


● HCl

RN 669075-38-1 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-, (+)- (9CI) (CA INDEX NAME)

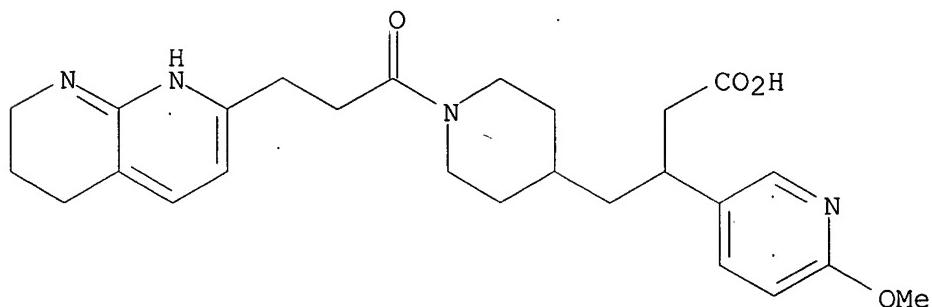
Rotation (+).



RN 669075-39-2 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-, (-)- (9CI) (CA INDEX NAME)

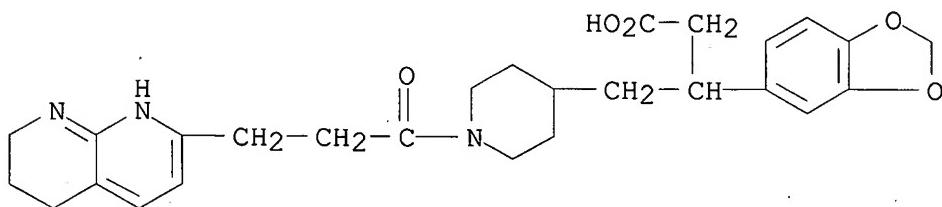
Rotation (-).



10/782,060

RN 669075-40-5 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



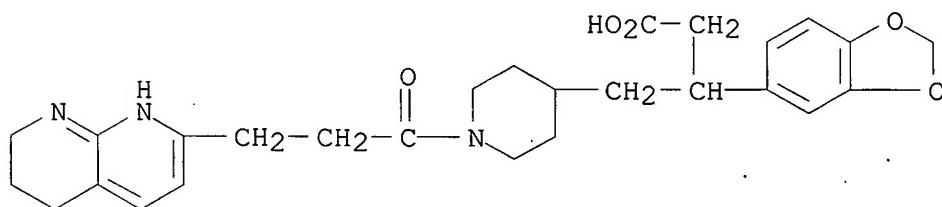
RN 669075-41-6 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-3-(5,6,7,8-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 669075-40-5

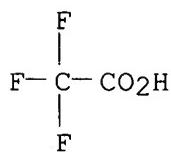
CMF C27 H33 N3 O5



CM 2

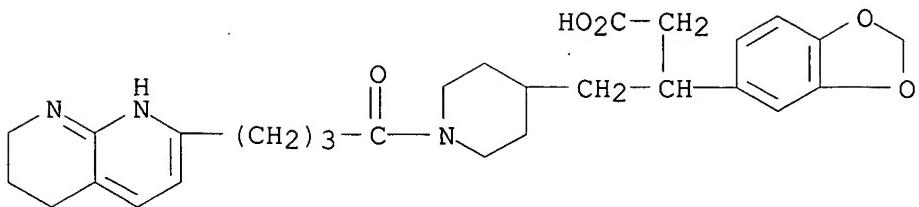
CRN 76-05-1

CMF C2 H F3 O2



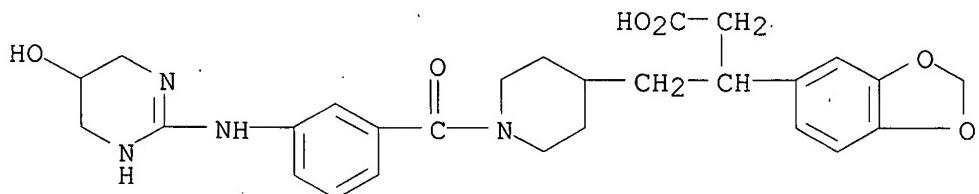
RN 669075-48-3 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]- (9CI) (CA INDEX NAME)



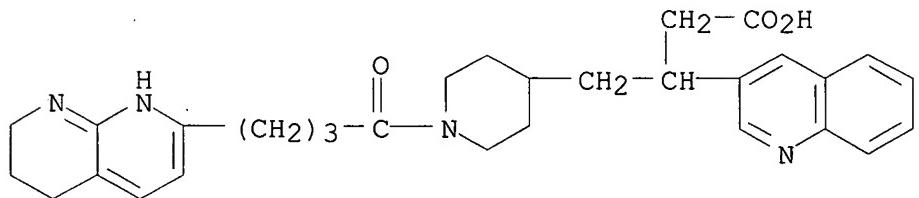
RN 669075-49-4 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]benzoyl]- (9CI) (CA INDEX NAME)



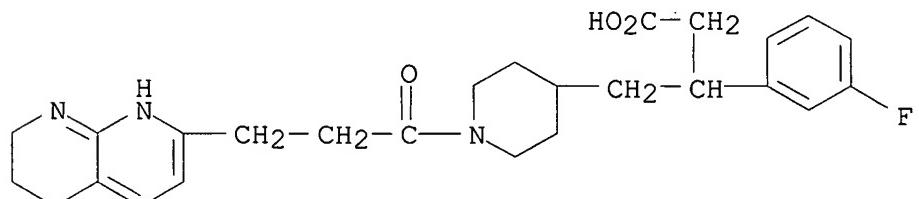
RN 669075-50-7 CAPLUS

CN 3-Quinolinopropanoic acid,  $\beta$ -[[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]methyl]- (9CI) (CA INDEX NAME)



RN 669075-51-8 CAPLUS

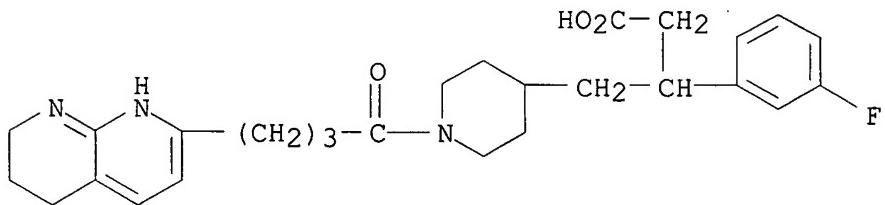
CN 4-Piperidinebutanoic acid,  $\beta$ -(3-fluorophenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



RN 669075-52-9 CAPLUS

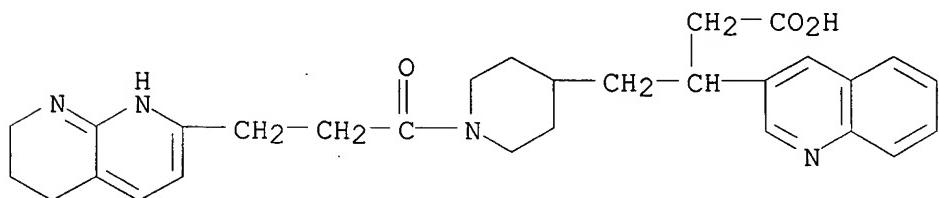
10/782,060

CN 4-Piperidinebutanoic acid,  $\beta$ -(3-fluorophenyl)-1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]- (9CI) (CA INDEX NAME)



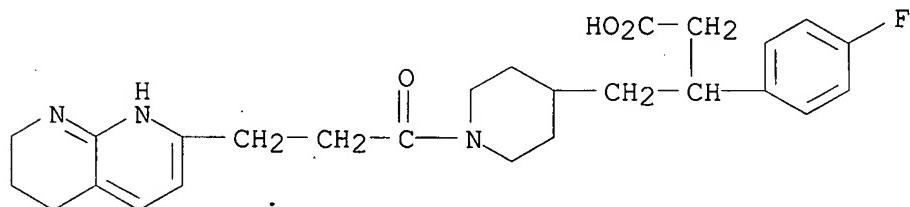
RN 669075-53-0 CAPLUS

CN 3-Quinolinopropanoic acid,  $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI) (CA INDEX NAME)



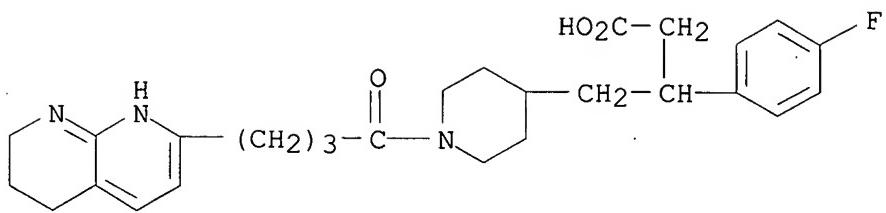
RN 669075-54-1 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(4-fluorophenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



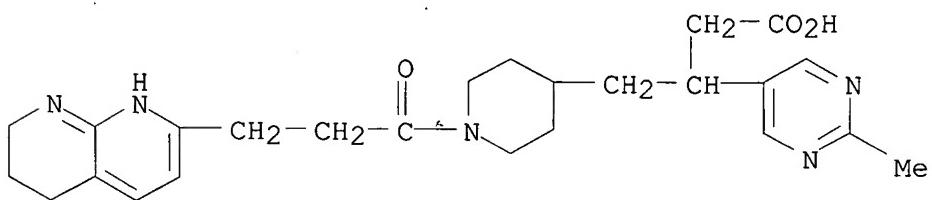
RN 669075-55-2 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(4-fluorophenyl)-1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]- (9CI) (CA INDEX NAME)



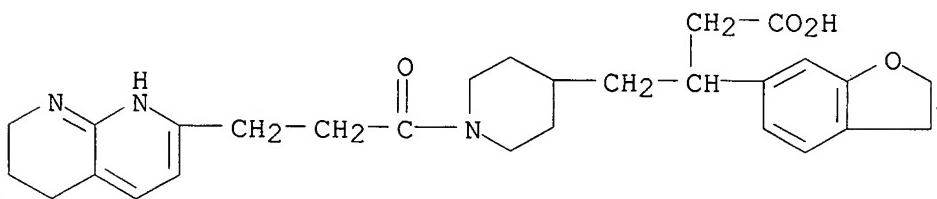
RN 669075-56-3 CAPLUS

CN 5-Pyrimidinepropanoic acid, 2-methyl-β-[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI)  
(CA INDEX NAME)



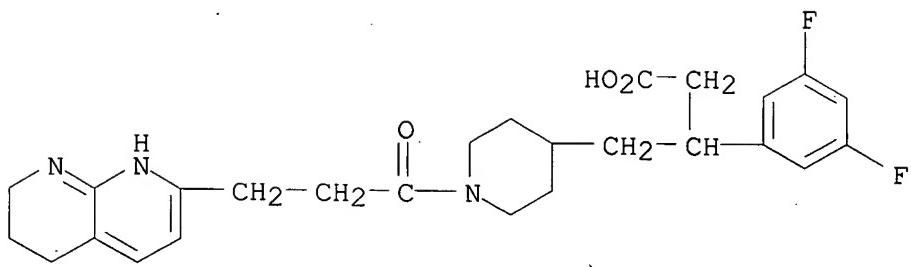
RN 669075-57-4 CAPLUS

CN 4-Piperidinebutanoic acid, β-(2,3-dihydro-6-benzofuranyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



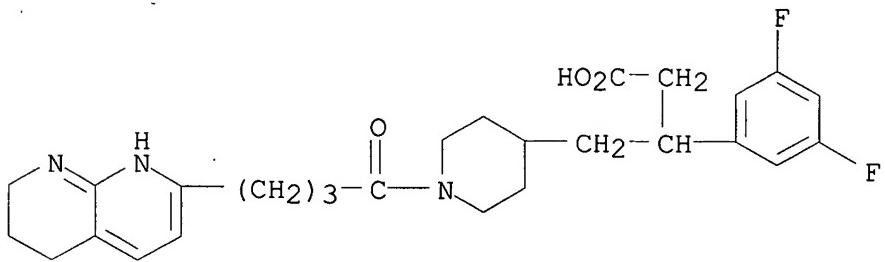
RN 669075-58-5 CAPLUS

CN 4-Piperidinebutanoic acid, β-(3,5-difluorophenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



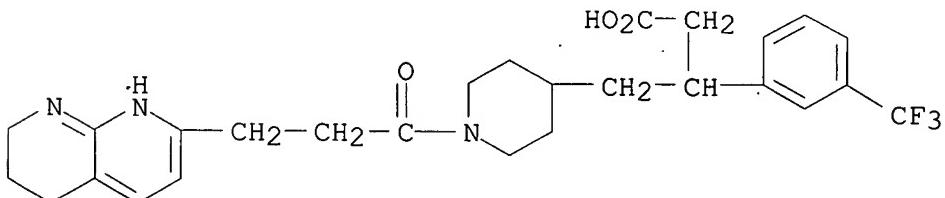
RN 669075-59-6 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(3,5-difluorophenyl)-1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]- (9CI) (CA INDEX NAME)



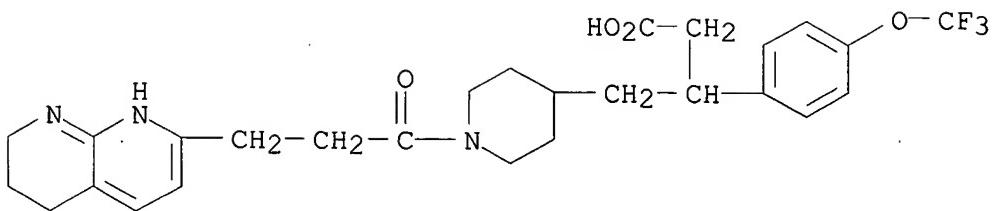
RN 669075-60-9 CAPLUS

CN 4-Piperidinebutanoic acid,  
1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-  
2-yl)propyl]- $\beta$ -[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



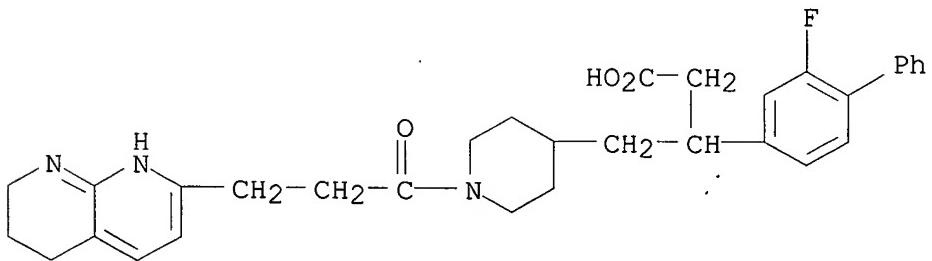
RN 669075-61-0 CAPLUS

CN 4-Piperidinebutanoic acid,  
1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-  
2-yl)propyl]- $\beta$ -[4-(trifluoromethoxy)phenyl]- (9CI) (CA INDEX NAME)



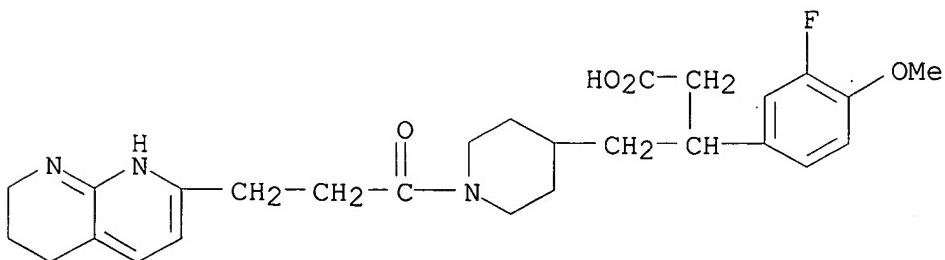
RN 669075-62-1 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(2-fluoro[1,1'-biphenyl]-4-yl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



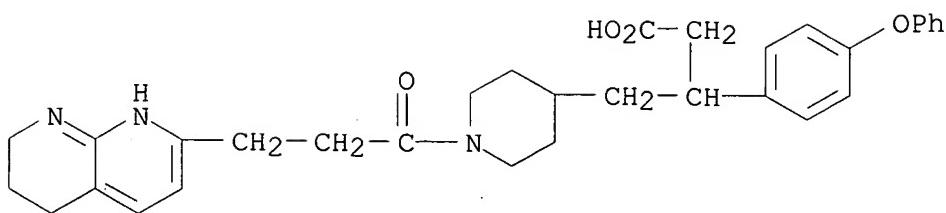
RN 669075-63-2 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(3-fluoro-4-methoxyphenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



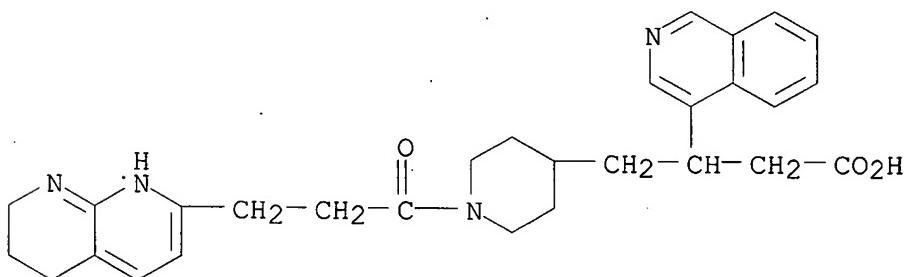
RN 669075-64-3 CAPLUS

CN 4-Piperidinebutanoic acid,  
1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-  
2-yl)propyl]- $\beta$ -(4-phenoxyphenyl)- (9CI) (CA INDEX NAME)



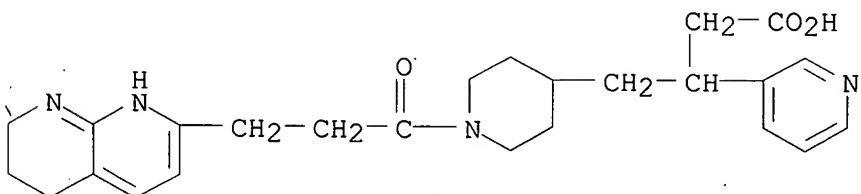
RN 669075-65-4 CAPLUS

CN 4-Isoquinolinepropanoic acid,  $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI) (CA INDEX NAME)



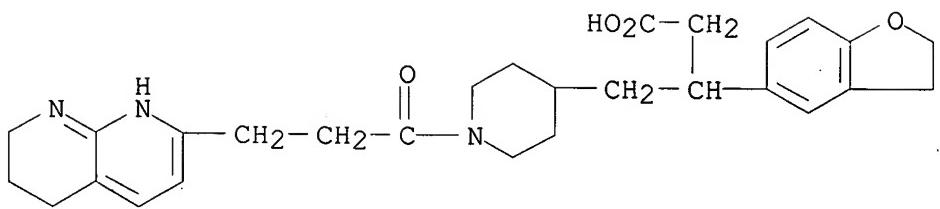
RN 669075-66-5 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI) (CA INDEX NAME)



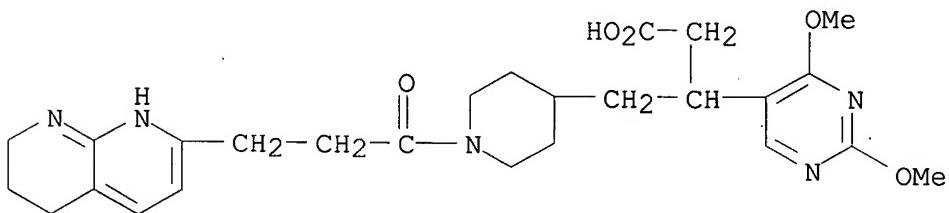
RN 669075-67-6 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(2,3-dihydro-5-benzofuranyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



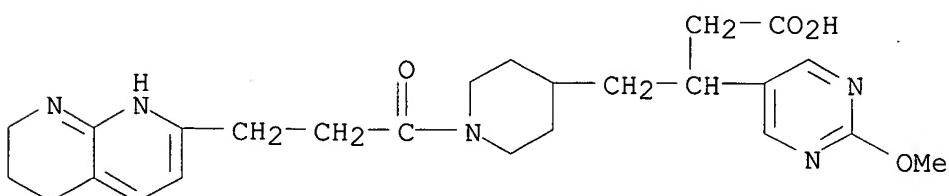
RN 669075-68-7 CAPLUS

CN 5-Pyrimidinepropanoic acid, 2,4-dimethoxy- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI)  
(CA INDEX NAME)



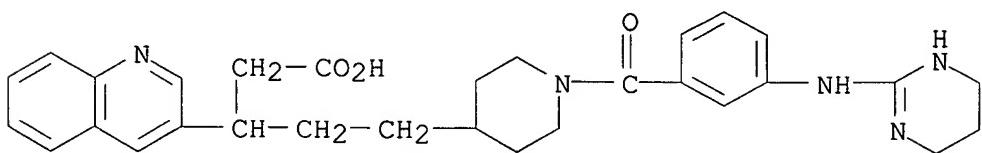
RN 669075-69-8 CAPLUS

CN 5-Pyrimidinepropanoic acid, 2-methoxy- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI)  
(CA INDEX NAME)



RN 669075-70-1 CAPLUS

CN 3-Quinolinopropanoic acid,  $\beta$ -[2-[1-[3-[(1,4,5,6-tetrahydro-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



10/782,060

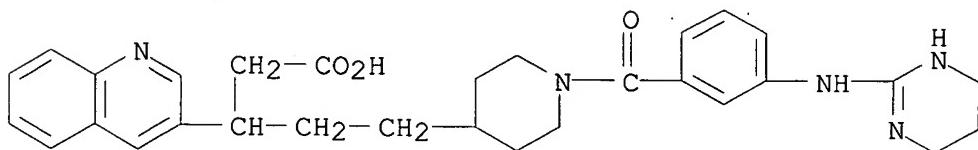
RN 669075-71-2 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[2-[1-[3-[(1,4,5,6-tetrahydro-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]-, mono(trifluoroacetate)  
(9CI) (CA INDEX NAME)

CM 1

CRN 669075-70-1

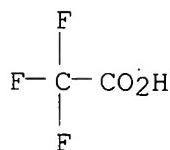
CMF C30 H35 N5 O3



CM 2

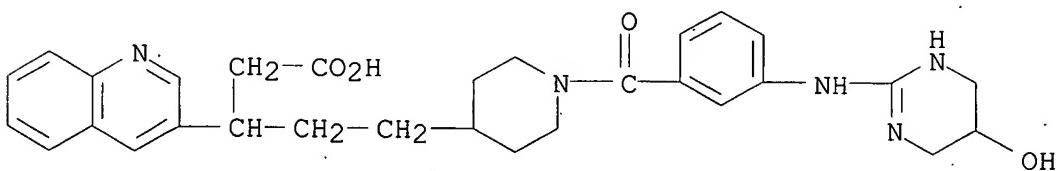
CRN 76-05-1

CMF C2 H F3 O2



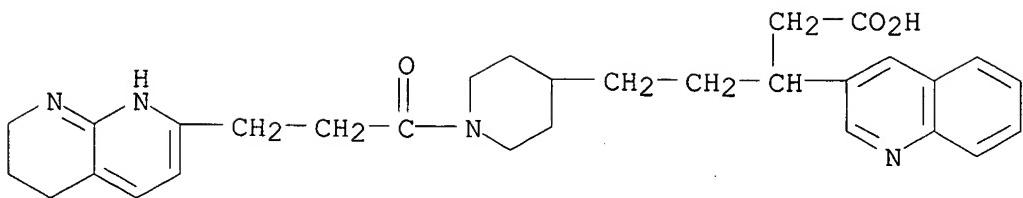
RN 669075-80-3 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[2-[1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



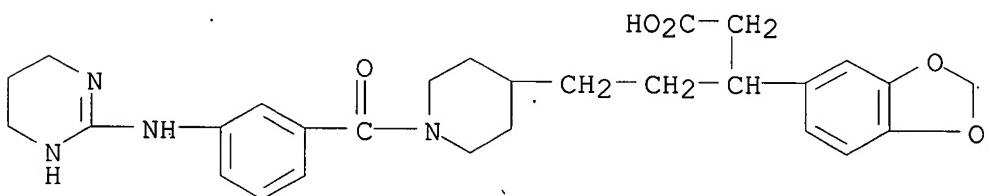
RN 669075-81-4 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[2-[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



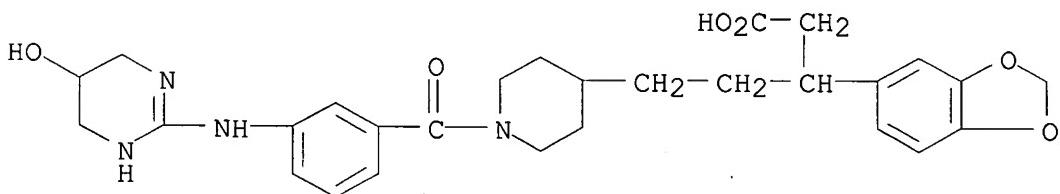
RN 669075-82-5 CAPLUS

CN 4-Piperidinepentanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[3-[(1,4,5,6-tetrahydro-2-pyrimidinyl)amino]benzoyl]- (9CI) (CA INDEX NAME)



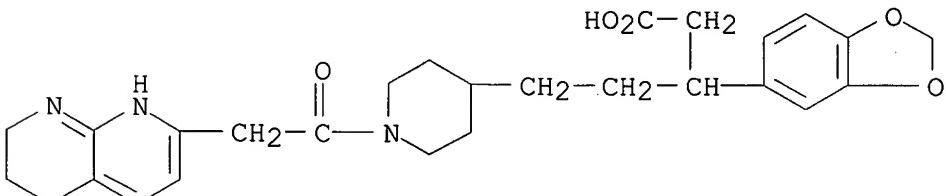
RN 669075-83-6 CAPLUS

CN 4-Piperidinepentanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]benzoyl]- (9CI) (CA INDEX NAME)



RN 669075-84-7 CAPLUS

CN 4-Piperidinepentanoic acid,  $\beta$ -1,3-benzodioxol-5-yl-1-[(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)acetyl]- (9CI) (CA INDEX NAME)

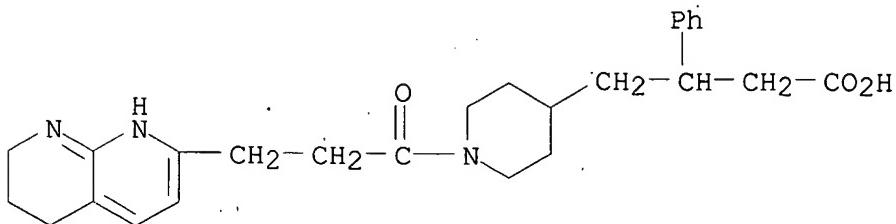


RN 669075-85-8 CAPLUS

CN 4-Piperidinebutanoic acid,  
1-[(1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-

10/782,060

2-yl)propyl]- $\beta$ -phenyl- (9CI) (CA INDEX NAME)



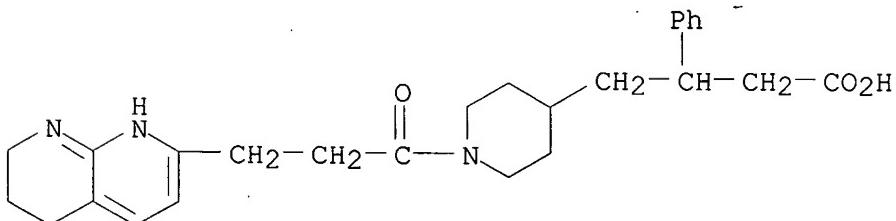
RN 669075-86-9 CAPLUS

CN 4-Piperidinebutanoic acid,  
1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 669075-85-8

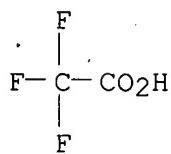
CMF C26 H33 N3 O3



CM 2

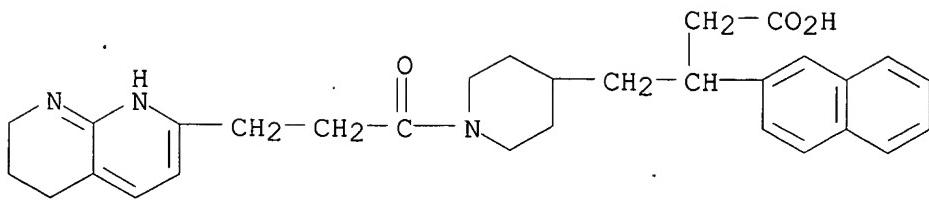
CRN 76-05-1

CMF C2 H F3 O2



RN 669075-93-8 CAPLUS

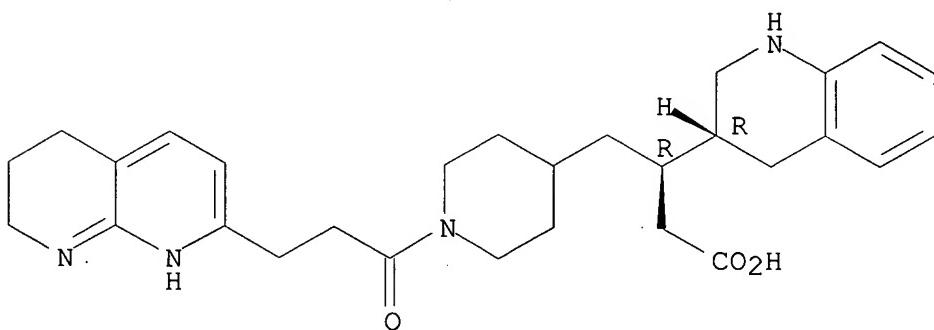
CN 4-Piperidinebutanoic acid,  $\beta$ -2-naphthalenyl-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



RN 669076-01-1 CAPLUS

CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro-β-[{1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl}methyl]-, (βR,3R)-rel-(+)-(9CI) (CA INDEX NAME)

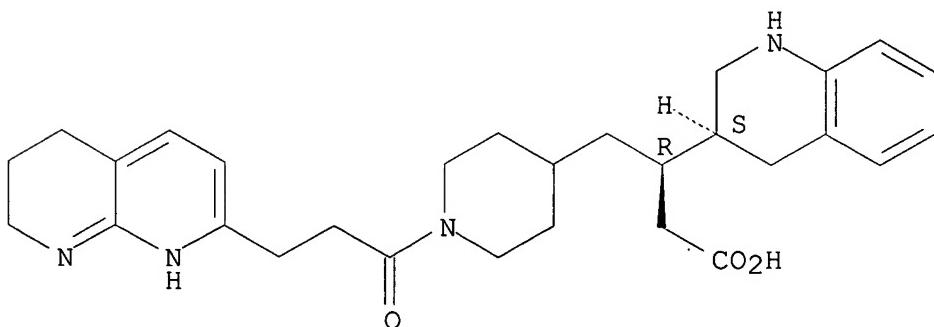
Rotation (+). Absolute stereochemistry unknown.



RN 669076-02-2 CAPLUS

CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro-β-[{1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl}methyl]-, (βR,3S)-rel-(+)-(9CI) (CA INDEX NAME)

Rotation (+). Absolute stereochemistry unknown.



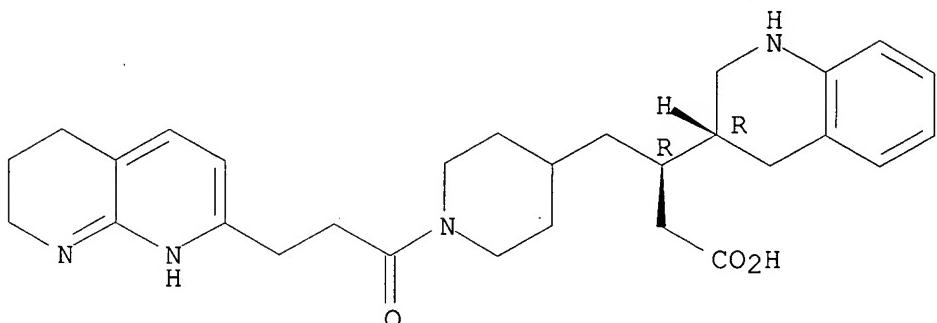
RN 669076-03-3 CAPLUS

CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro-β-[{1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl}methyl]-,

10/782,060

( $\beta$ R,3R)-rel-(-) - (9CI) (CA INDEX NAME)

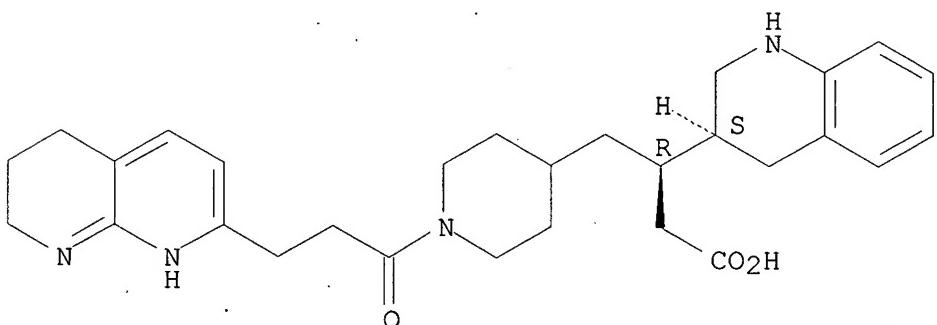
Rotation (-). Absolute stereochemistry unknown.



RN 669076-04-4 CAPLUS

CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro- $\beta$ -[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-, ( $\beta$ R,3S)-rel-(-) - (9CI) (CA INDEX NAME)

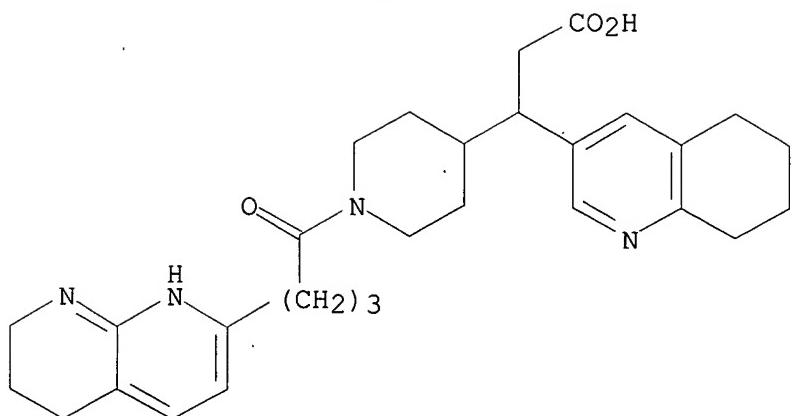
Rotation (-). Absolute stereochemistry unknown.



RN 669076-05-5 CAPLUS

CN 3-Quinolinepropanoic acid, 5,6,7,8-tetrahydro- $\beta$ -[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]-, (+)- (9CI)  
(CA INDEX NAME)

Rotation (+).



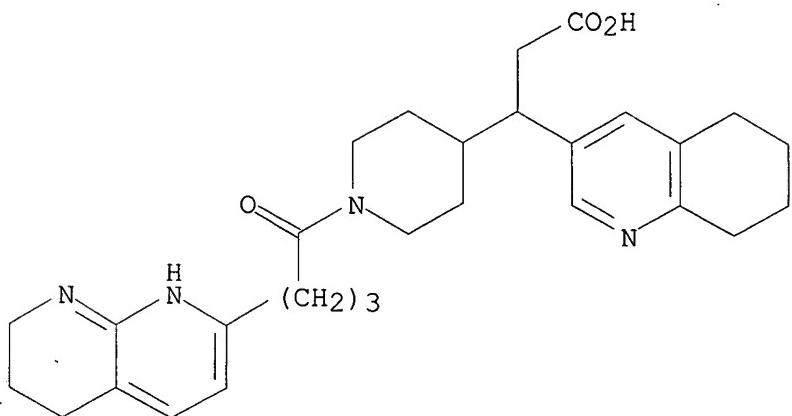
RN 669076-06-6 CAPLUS

CN 3-Quinolinepropanoic acid, 5,6,7,8-tetrahydro- $\beta$ -[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]-, (-)- (9CI)

(CA

INDEX NAME)

Rotation (-).

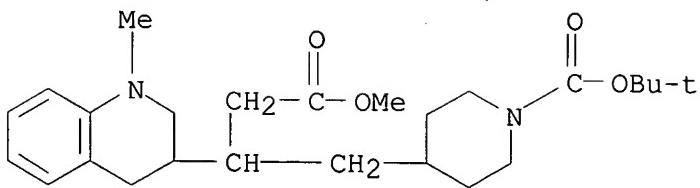


RN 669076-07-7 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]methyl]-1,2,3,4-tetrahydro-1-methyl-, methyl ester (9CI)

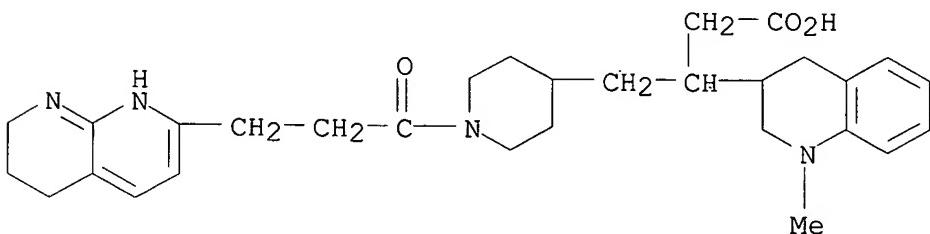
(CA

INDEX NAME)



RN 669076-08-8 CAPLUS

CN 3-Quinolinopropanoic acid, 1,2,3,4-tetrahydro-1-methyl-β-[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]-(9CI) (CA INDEX NAME)



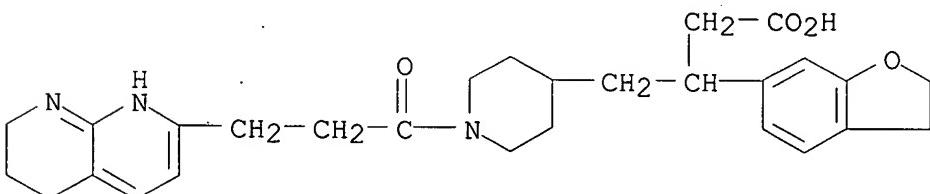
RN 669076-20-4 CAPLUS

CN 4-Piperidinebutanoic acid, β-(2,3-dihydro-6-benzofuranyl)-1-[1-oxo-3-(5,6,7,8-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, mono(trifluoroacetate)  
(9CI) (CA INDEX NAME)

CM 1

CRN 669075-57-4

CMF C28 H35 N3 O4

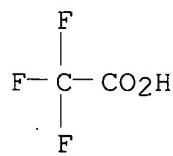


CM 2

CRN 76-05-1

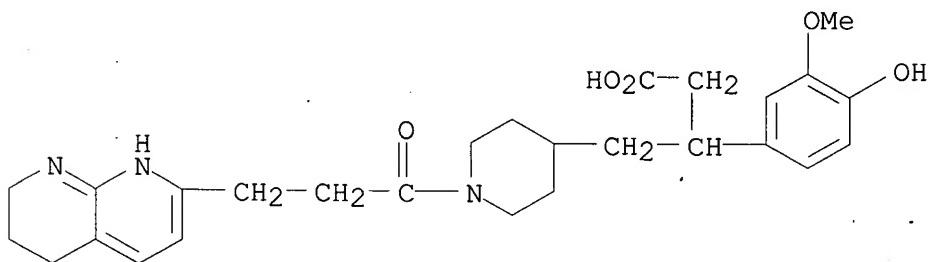
CMF C2 H F3 O2

10/782,060



RN 669076-29-3 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(4-hydroxy-3-methoxyphenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



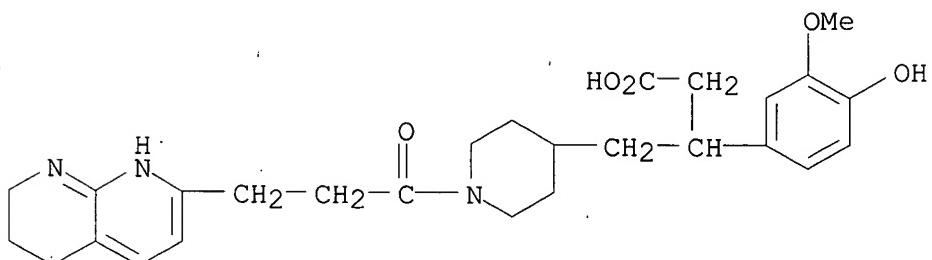
RN 669076-30-6 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(4-hydroxy-3-methoxyphenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, mono(trifluoroacetate)  
(salt) (9CI) (CA INDEX NAME)

CM 1

CRN 669076-29-3

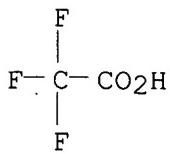
CMF C27 H35 N3 O5



CM 2

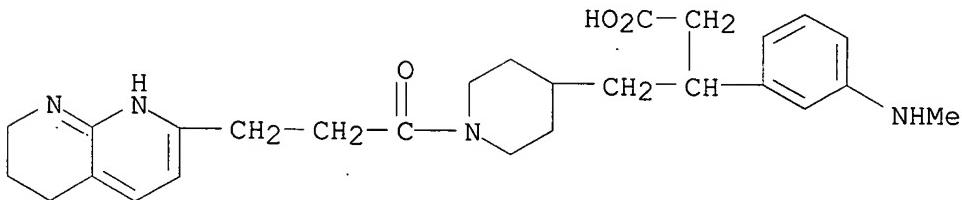
CRN 76-05-1

CMF C2 H F3 O2



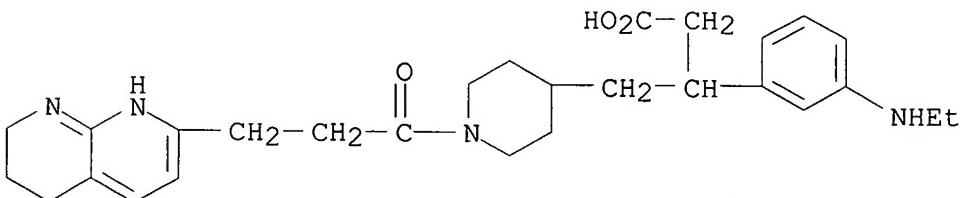
RN 669076-38-4 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -[3-(methylamino)phenyl]-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



RN 669076-45-3 CAPLUS

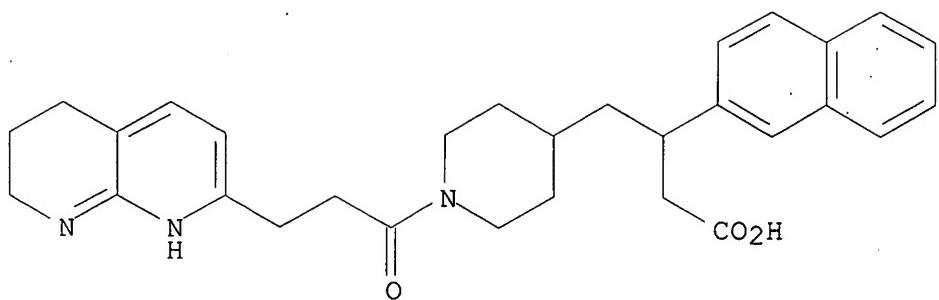
CN 4-Piperidinebutanoic acid,  $\beta$ -[3-(ethylamino)phenyl]-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI). (CA INDEX NAME)



RN 669076-46-4 CAPLUS

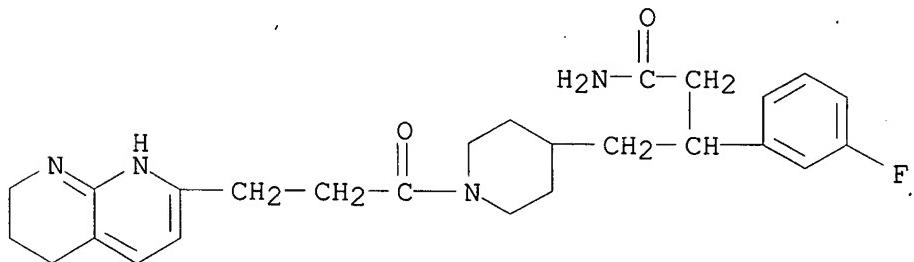
CN 4-Piperidinebutanoic acid,  $\beta$ -2-naphthalenyl-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-, (-)- (9CI) (CA INDEX NAME)

Rotation (-).



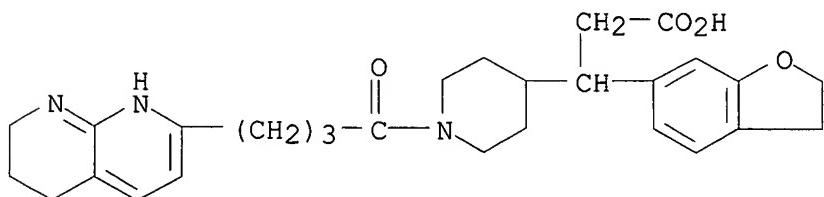
RN 669076-55-5 CAPLUS

CN 4-Piperidinebutanamide,  $\beta$ -(3-fluorophenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



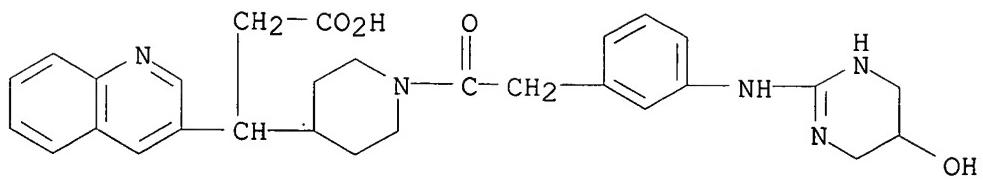
RN 669076-70-4 CAPLUS

CN 4-Piperidinopropanoic acid,  $\beta$ -(2,3-dihydro-6-benzofuranyl)-1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]- (9CI) (CA INDEX NAME)



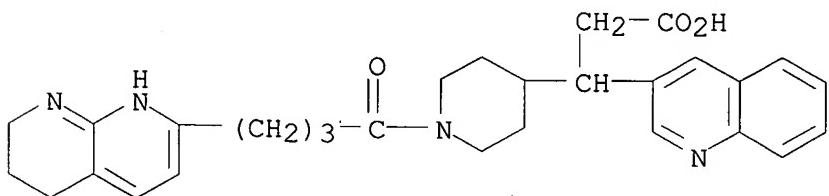
RN 669076-78-2 CAPLUS

CN 3-Quinolinopropanoic acid,  $\beta$ -[1-[[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]phenyl]acetyl]-4-piperidinyl]- (9CI) (CA INDEX NAME)



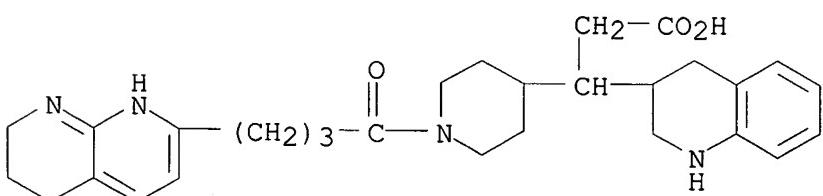
RN 669076-79-3 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]- (9CI) (CA INDEX NAME)



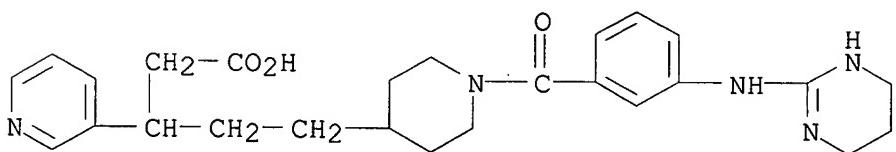
RN 669076-80-6 CAPLUS

CN 3-Quinolinepropanoic acid, 1,2,3,4-tetrahydro- $\beta$ -[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]- (9CI) (CA INDEX NAME)



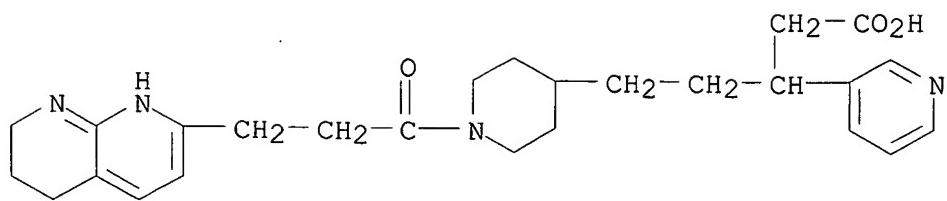
RN 669076-81-7 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[3-[(1,4,5,6-tetrahydro-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



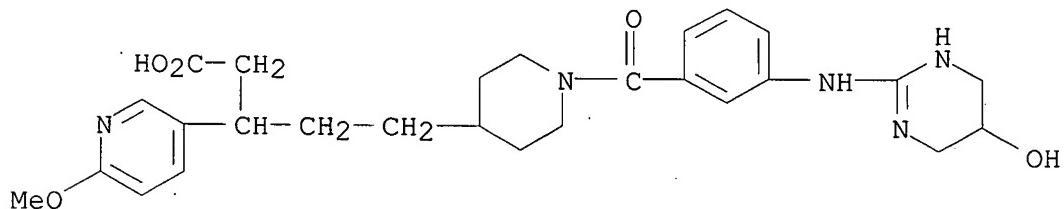
RN 669076-82-8 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



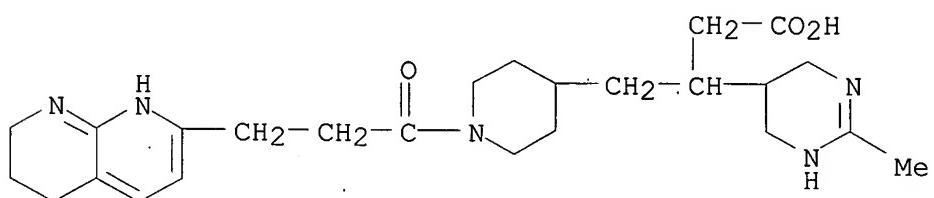
RN 669076-83-9 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy-β-[2-[1-[3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]benzoyl]-4-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



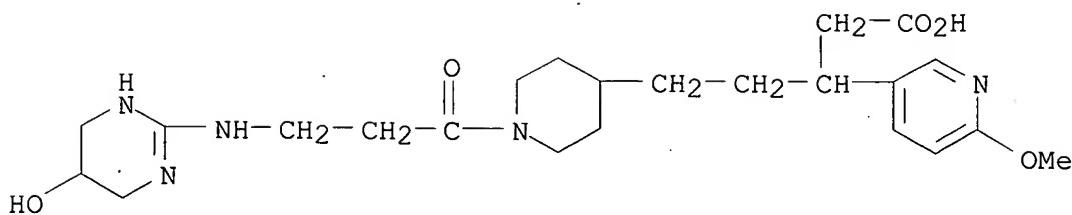
RN 669076-84-0 CAPLUS

CN 5-Pyrimidinepropanoic acid, 1,4,5,6-tetrahydro-2-methyl-β-[[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl)methyl]- (9CI) (CA INDEX NAME)



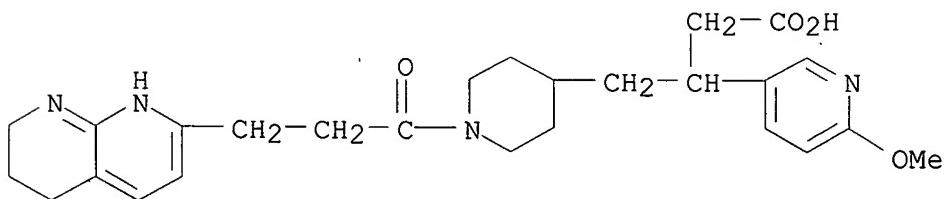
RN 669076-85-1 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy-β-[2-[1-[1-oxo-3-[(1,4,5,6-tetrahydro-5-hydroxy-2-pyrimidinyl)amino]propyl]-4-piperidinyl]ethyl]- (9CI) (CA INDEX NAME)



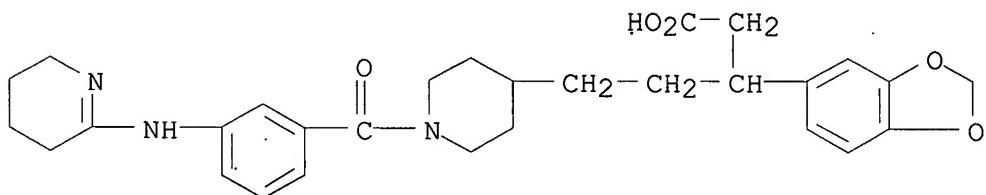
RN 669076-86-2 CAPLUS

CN 3-Pyridinepropanoic acid, 6-methoxy-β-[1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]-4-piperidinyl]methyl]- (9CI)  
(CA INDEX NAME)



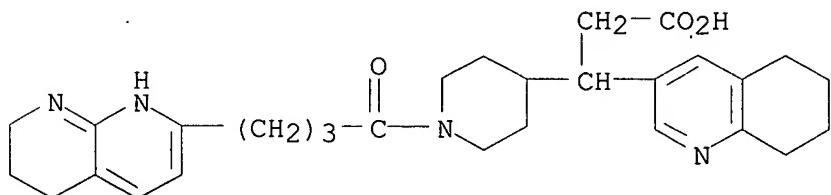
RN 669076-87-3 CAPLUS

CN 4-Piperidinepentanoic acid, β-1,3-benzodioxol-5-yl-1-[3-[(3,4,5,6-tetrahydro-2-pyridinyl)amino]benzoyl]- (9CI) (CA INDEX NAME)



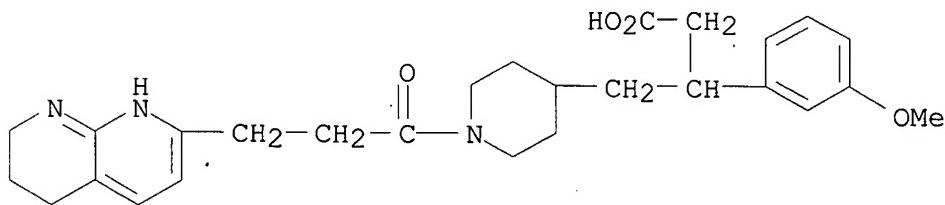
RN 669076-88-4 CAPLUS

CN 3-Quinolinepropanoic acid, 5,6,7,8-tetrahydro-β-[1-[1-oxo-4-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)butyl]-4-piperidinyl]- (9CI) (CA INDEX NAME)



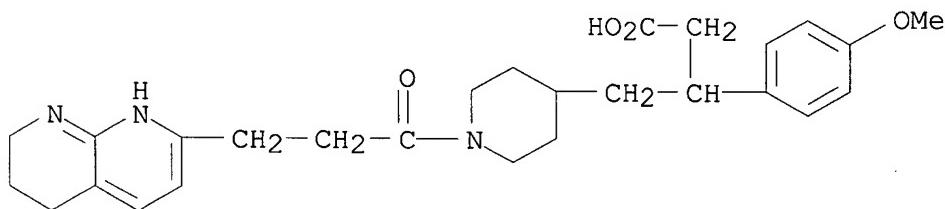
RN 669076-89-5 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(3-methoxyphenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



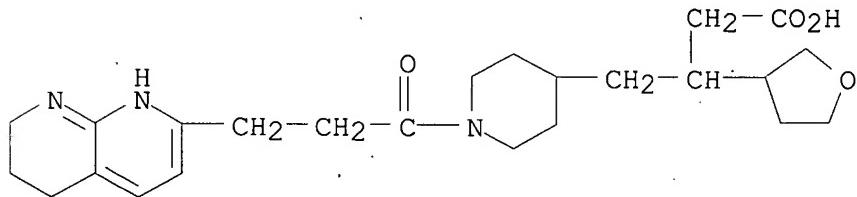
RN 669076-90-8 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(4-methoxyphenyl)-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



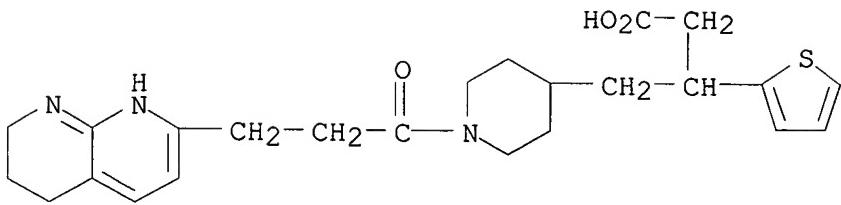
RN 669076-91-9 CAPLUS

CN 4-Piperidinebutanoic acid,  
1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-  
2-yl)propyl]- $\beta$ -(tetrahydro-3-furanyl)- (9CI) (CA INDEX NAME)



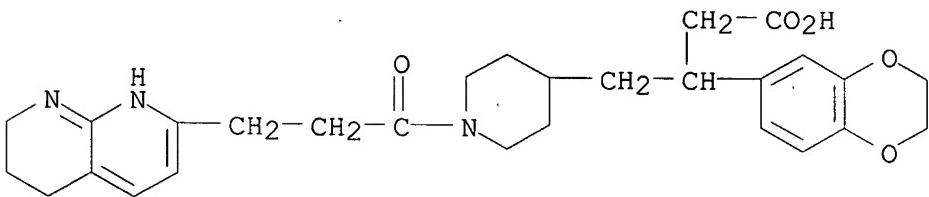
RN 669076-92-0 CAPLUS

CN 4-Piperidinebutanoic acid,  
1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-  
2-yl)propyl]- $\beta$ -2-thienyl- (9CI) (CA INDEX NAME)



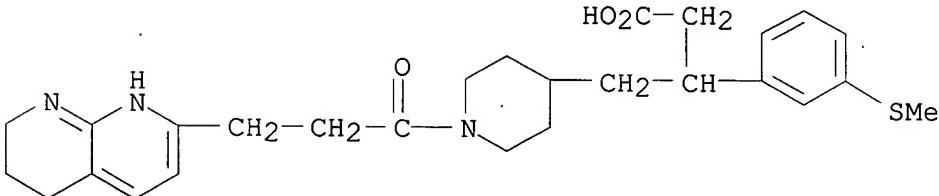
RN 669076-93-1 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -[2,3-dihydro-1,4-benzodioxin-6-yl]-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



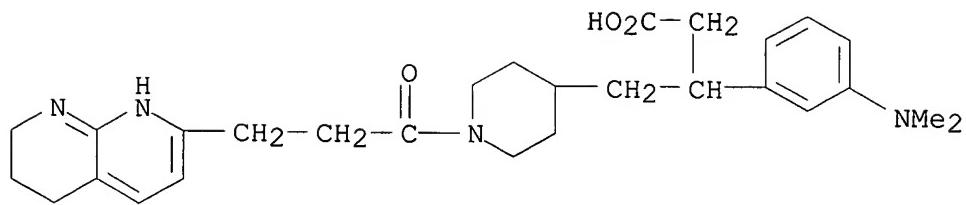
RN 669076-94-2 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -[3-(methylthio)phenyl]-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



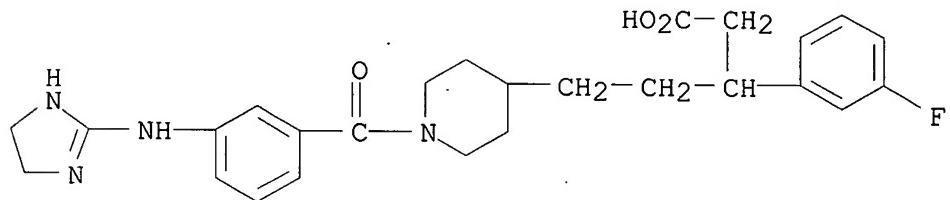
RN 669076-96-4 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -[3-(dimethylamino)phenyl]-1-[1-oxo-3-(1,5,6,7-tetrahydro-1,8-naphthyridin-2-yl)propyl]- (9CI) (CA INDEX NAME)



RN 669076-97-5 CAPLUS

CN 4-Piperidinpentanoic acid, 1-[3-[(4,5-dihydro-1H-imidazol-2-yl)amino]benzoyl]-β-(3-fluorophenyl)- (9CI) (CA INDEX NAME)



IT 669075-36-9P 669075-37-0P 669075-97-2P

669075-98-3P 669075-99-4P 669076-00-0P

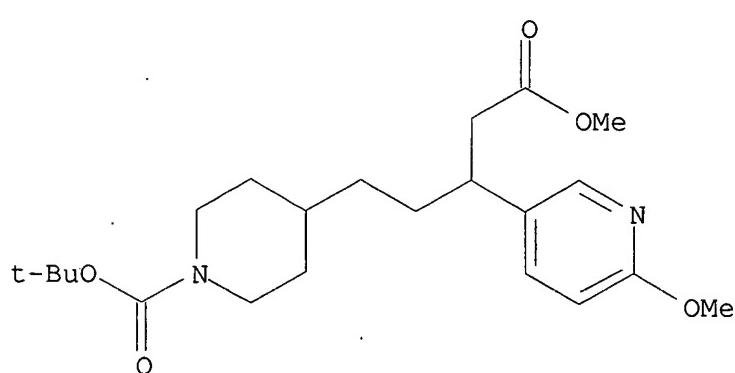
669076-25-9P 669076-51-1P

RL: PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of piperidinyl derivs. useful as αvβ3 and  
 αvβ5 integrin receptor antagonists)

RN 669075-36-9 CAPLUS

CN 3-Pyridinepropanoic acid, β-[2-[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]ethyl]-6-methoxy-, methyl ester, (+)- (9CI) (CA INDEX NAME)

Rotation (+).

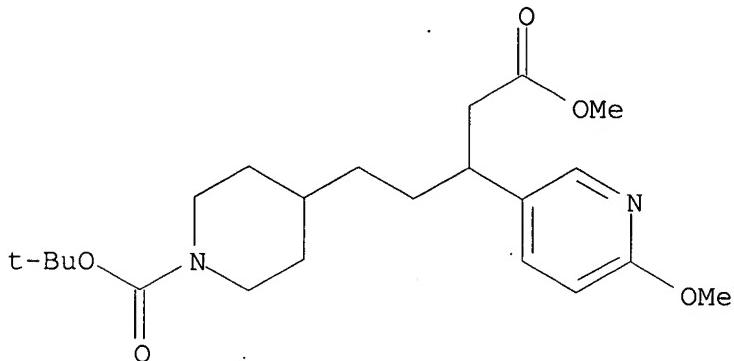


10/782,060

RN 669075-37-0 CAPLUS

CN 3-Pyridinepropanoic acid,  $\beta$ -[2-[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]ethyl]-6-methoxy-, methyl ester, (-)- (9CI) (CA INDEX NAME)

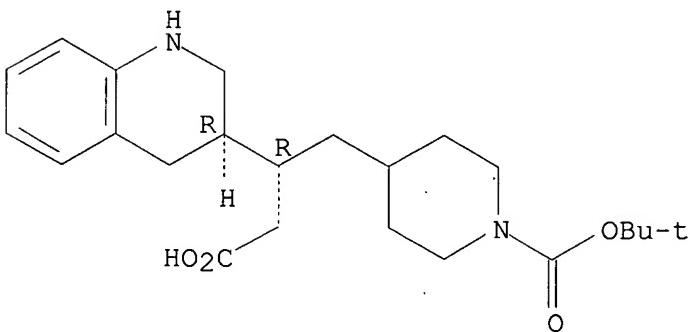
Rotation (-).



RN 669075-97-2 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]methyl]-1,2,3,4-tetrahydro-, ( $\beta$ R,3R)-rel-(+)- (9CI) (CA INDEX NAME)

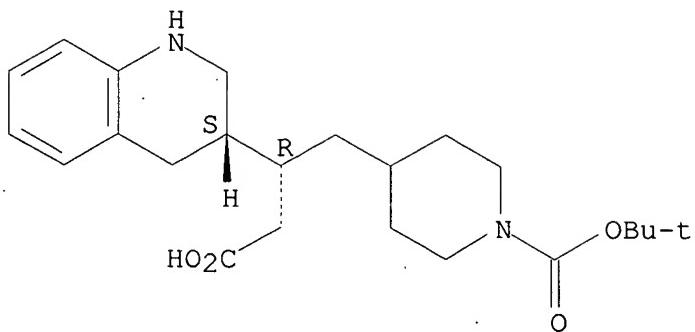
Rotation (+). Absolute stereochemistry unknown..



RN 669075-98-3 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]methyl]-1,2,3,4-tetrahydro-, ( $\beta$ R,3S)-rel-(+)- (9CI) (CA INDEX NAME)

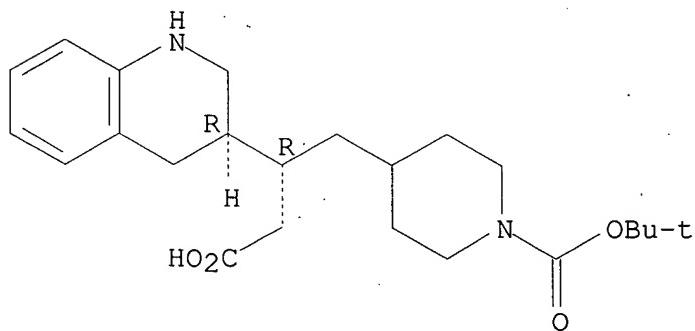
Rotation (+). Absolute stereochemistry unknown.



RN 669075-99-4 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]methyl]-1,2,3,4-tetrahydro-, ( $\beta$ R,3R)-rel-(-)- (9CI) (CA INDEX NAME)

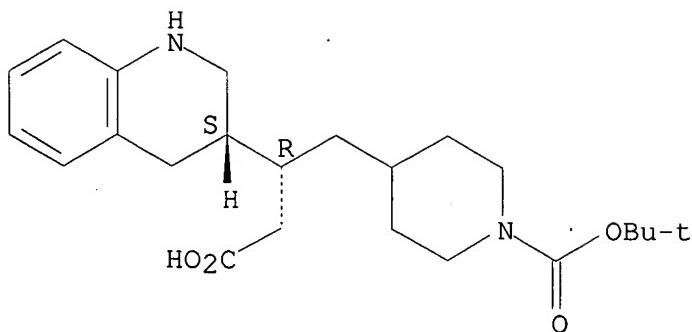
Rotation (-). Absolute stereochemistry unknown.



RN 669076-00-0 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]methyl]-1,2,3,4-tetrahydro-, ( $\beta$ R,3S)-rel-(-)- (9CI) (CA INDEX NAME)

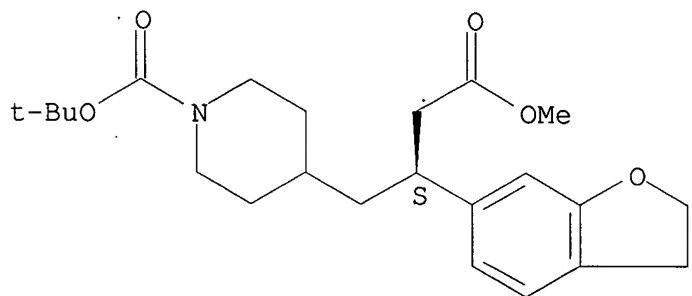
Rotation (-). Absolute stereochemistry unknown.



RN 669076-25-9 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(2,3-dihydro-6-benzofuranyl)-1-[(1,1-dimethylethoxy)carbonyl]-, methyl ester, ( $\beta\text{S}$ )- (9CI) (CA INDEX NAME)

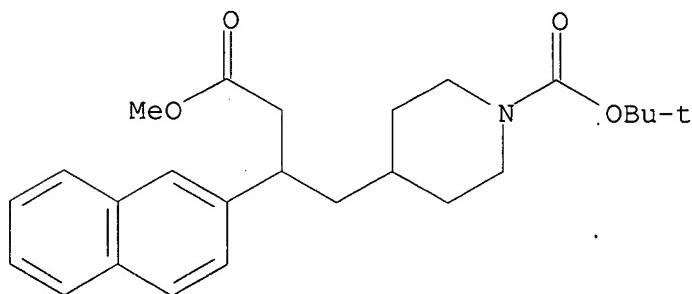
Absolute stereochemistry.



RN 669076-51-1 CAPLUS

CN 4-Piperidinebutanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]- $\beta$ -2-naphthalenyl-, methyl ester, (-)- (9CI) (CA INDEX NAME)

Rotation (-).



IT 669076-24-8P 669076-50-0P

RL: PUR (Purification or recovery); SPN (Synthetic preparation); PREP

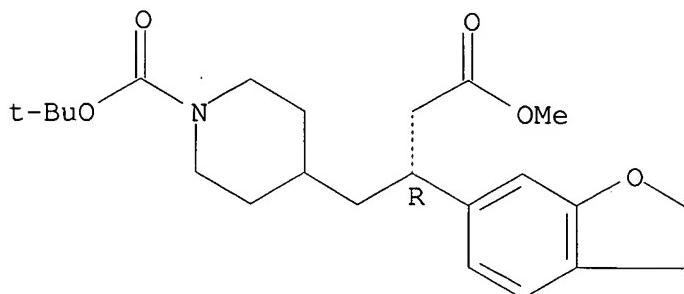
(Preparation)

(preparation of piperidinyl derivs. useful as  $\alpha\beta 3$  and  
 $\alpha\beta 5$  integrin receptor antagonists)

RN 669076-24-8 CAPLUS

CN 4-Piperidinebutanoic acid,  $\beta$ -(2,3-dihydro-6-benzofuranyl)-1-[(1,1-dimethylethoxy)carbonyl]-, methyl ester, ( $\beta R$ )- (9CI) (CA INDEX NAME)

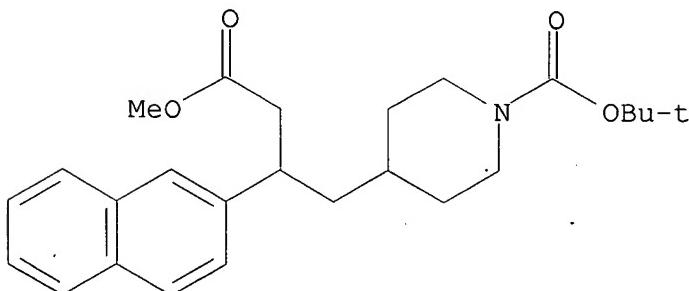
Absolute stereochemistry.



RN 669076-50-0 CAPLUS

CN 4-Piperidinebutanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]- $\beta$ -2-naphthalenyl-, methyl ester, (+)- (9CI) (CA INDEX NAME)

Rotation (+).

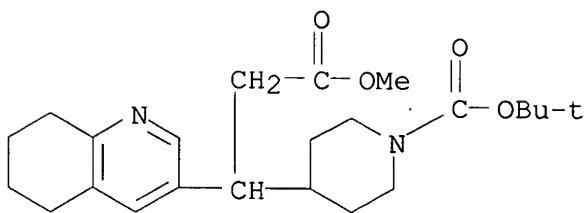


IT 669075-06-3P 669075-96-1P

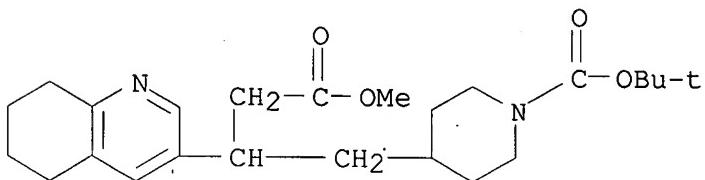
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of piperidinyl derivs. useful as  $\alpha\beta 3$  and  
 $\alpha\beta 5$  integrin receptor antagonists)

RN 669075-06-3 CAPLUS

CN 3-Quinolinopropanoic acid,  $\beta$ -[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]-5,6,7,8-tetrahydro-, methyl ester (9CI) (CA INDEX NAME)



RN 669075-96-1 CAPLUS

CN 3-Quinolinepropanoic acid,  $\beta$ -[[1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl)methyl]-5,6,7,8-tetrahydro-, methyl ester (9CI) (CA INDEX NAME)

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The invention relates to piperidinyl derivs. of formula I [wherein: Y = C(O)W or W; W = C0-6 alkyl, C0-6 alkylaryl, etc.; X = (CH<sub>2</sub>)<sub>n</sub>, n = 0-3;

Z =

OH, NH<sub>2</sub>, NH-C1-8alkyl, alkoxy, etc.; R = H, alk(en/yn)yl, cycloalkyl, heterocyclyl, (hetero)aryl] that selectively bind integrin receptors. Compds. I are useful for the treatment of  $\alpha$ v integrin-mediated disorders such as cancer-associated pathologies, atherosclerosis, bone resorption, muscular degeneration, etc. In vitro solid phase  $\alpha$ v $\beta$ 3,  $\alpha$ v $\beta$ 5, and GP IIb/IIIa binding assay methods were performed. For instance, compound II ( $\alpha$ v $\beta$ 3 IC<sub>50</sub> = 0.056,  $\alpha$ v $\beta$ 5 IC<sub>50</sub> > 5,  $\alpha$ IIb $\beta$ 3 IC<sub>50</sub> = 4.33) was prepared via amidation of pyrimidine III by piperidine derivative IV, hydrolysis, and subsequent catalytic hydrogenation of obtained piperidine V (no yield data).

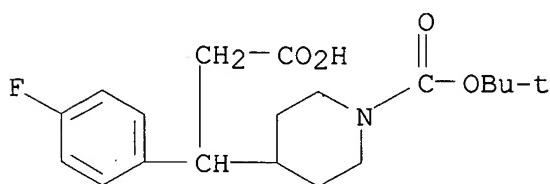
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

ACCESSION NUMBER: 2004:41441 CAPLUS  
 DOCUMENT NUMBER: 140:93935  
 TITLE: N-benzyl-3-phenyl-3-heterocyclyl-propionamide  
 compounds as tachykinin-serotonin reuptake  
 inhibitors  
 INVENTOR(S): Alvaro, Giuseppe; Cardullo, Francesca; D'adamo,  
 Lucilla; Piga, Elisabetta; Seri, Catia  
 PATENT ASSIGNEE(S): Glaxo Group Limited, UK  
 SOURCE: PCT Int. Appl., 105 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

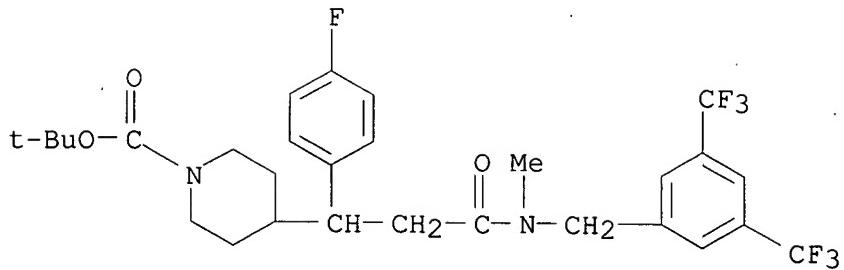
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WO 2004005255	A1	20040115	WO 2003-EP7126	20030702
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RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003281220	A1	20040123	AU 2003-281220	20030702
EP 1517894	A1	20050330	EP 2003-740413	20030702
EP 1517894	B1	20060906		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2006501182	T	20060112	JP 2004-518695	20030702
AT 338748	T	20060915	AT 2003-740413	20030702
US 2006058348	A1	20060316	US 2005-521159	20050811
PRIORITY APPLN. INFO.:			GB 2002-15392	A 20020703
			WO 2003-EP7126	W 20030702

OTHER SOURCE(S): MARPAT 140:93935  
 IT 645378-25-2P, 4-[2-Carboxy-1-(4-fluorophenyl)ethyl]piperidine-1-carboxylic acid tert-butyl ester 645378-27-4P,  
 4-[2-[[3,5-Bis(trifluoromethyl)benzyl](methyl)carbamoyl]-1-(4-fluorophenyl)ethyl]piperidine-1-carboxylic acid tert-butyl ester  
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 645378-39-8P, 4-[2-Methoxycarbonyl-1-(4-fluorophenyl)ethyl]piperidine-1-carboxylic acid tert-butyl ester  
 645378-41-2P, 4-[2-[[1-(3,5-Dichlorophenyl)ethyl]methylcarbamoyl]-1-(4-fluorophenyl)ethyl]piperidine-1-carboxylic acid tert-butyl ester  
 645378-52-5P, 1,1-Dimethylethyl 4-[(1R)-3-[(1R)-1-[3,5-

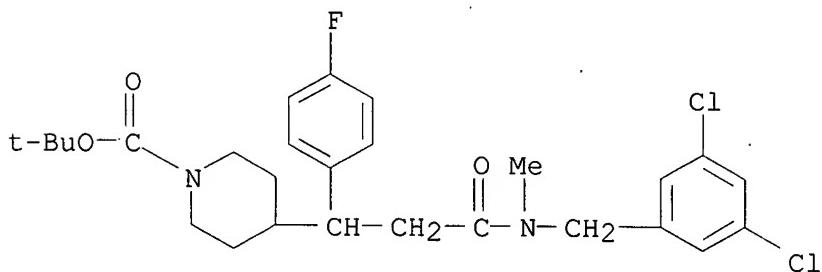
bis(trifluoromethyl)phenyl]ethyl] (methyl)amino]-1-(4-fluorophenyl)-3-oxopropyl]-1-piperidinecarboxylate 645378-53-6P,  
 1,1-Dimethylethyl  
 4-[(1S)-3-[[*(R)*-1-[3,5-bis(trifluoromethyl)phenyl]ethyl]  
 (methyl)amino]-1-(4-fluorophenyl)-3-oxopropyl]-1-piperidinecarboxylate 645378-54-7P, 1,1-Dimethylethyl 4-[(1S)-3-[[*(S)*-1-[3,5-bis(trifluoromethyl)phenyl]ethyl] (methyl)amino]-1-(4-fluorophenyl)-3-oxopropyl]-1-piperidinecarboxylate 645378-55-8P,  
 1,1-Dimethylethyl 4-[3-[[1-[3,5-bis(trifluoromethyl)phenyl]-1-methylethyl]amino]-1-(4-fluorophenyl)-3-oxopropyl]-1-piperidinecarboxylate 645378-56-9P, 1,1-Dimethylethyl 4-[3-[[1-[3,5-bis(trifluoromethyl)phenyl]-1-methylethyl] (methyl)amino]-1-(4-fluorophenyl)-3-oxopropyl]-1-piperidinecarboxylate 645378-57-0P,  
 1,1-Dimethylethyl  
 4-[3-[[[3-bromo-4-(methyloxy)phenyl]methyl] (methyl)amino]-1-(4-fluorophenyl)-3-oxopropyl]-1-piperidinecarboxylate 645378-59-2P, 1,1-Dimethylethyl 4-[3-[[3,5-dimethylphenyl]methyl] (methyl)amino]-1-(4-fluorophenyl)-3-oxopropyl]-1-piperidinecarboxylate 645378-60-5P, 1,1-Dimethylethyl  
 4-[3-[[3,4-dibromophenyl]methyl] (methyl)amino]-1-(4-fluorophenyl)-3-oxopropyl]-1-piperidinecarboxylate 645378-62-7P,  
 1,1-Dimethylethyl  
 4-[3-[[3-fluoro-2-methylphenyl]methyl] (methyl)amino]-1-(4-fluorophenyl)-3-oxopropyl]-1-piperidinecarboxylate 645378-65-0P  
 , 1,1-Dimethylethyl  
 4-[3-[[2-chloro-3-(trifluoromethyl)phenyl]methyl] (methyl)amino]-1-(4-fluorophenyl)-3-oxopropyl]-1-piperidinecarboxylate  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
 RACT  
 (Reactant or reagent)  
 (N-benzyl-3-Ph-3-heterocyclyl-propionamide compds. as tachykinin  
 and/or  
 serotonin reuptake inhibitors)  
 RN 645378-25-2 CAPLUS  
 CN 4-Piperidinopropanoic acid, 1-[(1,1-dimethylethoxy) carbonyl]- $\beta$ -(4-fluorophenyl)- (9CI) (CA INDEX NAME)



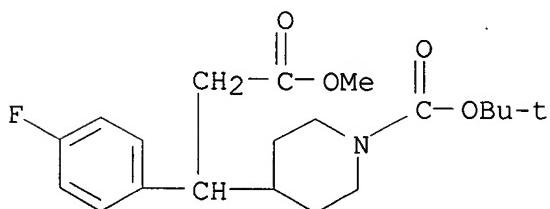
RN 645378-27-4 CAPLUS  
 CN 1-Piperidinecarboxylic acid,  
 4-[3-[[3,5-bis(trifluoromethyl)phenyl]methyl] (methyl)amino]-1-(4-fluorophenyl)-3-oxopropyl]-, 1,1-dimethylethyl ester  
 (9CI) (CA INDEX NAME)



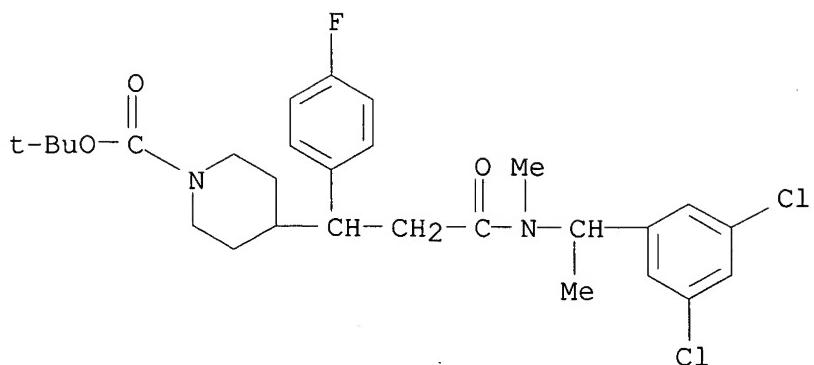
RN 645378-29-6 CAPLUS  
CN 1-Piperidinecarboxylic acid,  
4-[3-[(3,5-dichlorophenyl)methyl]methylamino  
]-1-(4-fluorophenyl)-3-oxopropyl-, 1,1-dimethylethyl ester (9CI) (CA  
INDEX NAME)



RN 645378-39-8 CAPLUS  
CN 4-Piperidinopropanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]- $\beta$ -(4-fluorophenyl)-, methyl ester (9CI) (CA INDEX NAME)



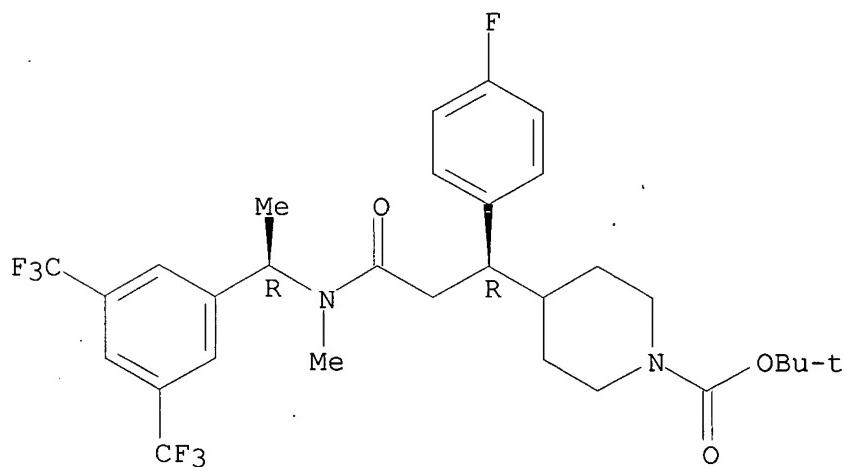
RN 645378-41-2 CAPLUS  
CN 1-Piperidinecarboxylic acid,  
4-[3-[(1-(3,5-dichlorophenyl)ethyl)methylamino  
]-1-(4-fluorophenyl)-3-oxopropyl-, 1,1-dimethylethyl ester (9CI) (CA  
INDEX NAME)



RN 645378-52-5 CAPLUS

CN 1-Piperidinecarboxylic acid, 4-[(1R)-3-[(1R)-1-[3,5-bis(trifluoromethyl)phenyl]ethyl]methylamino]-1-(4-fluorophenyl)-3-oxopropyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

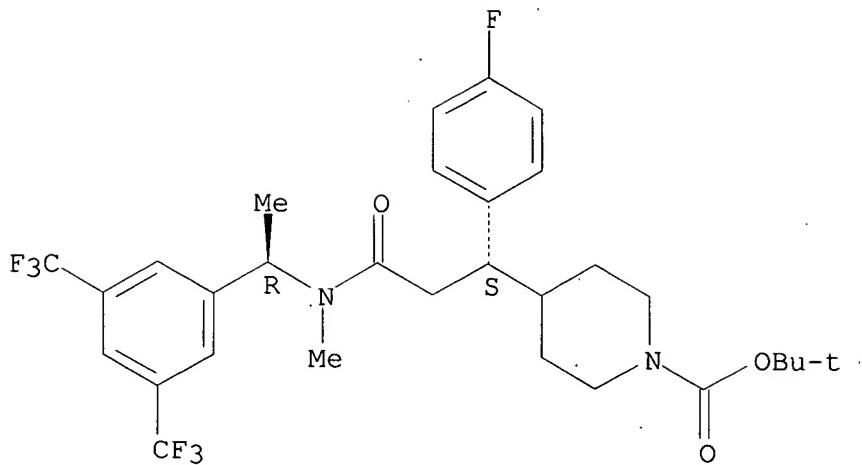
Absolute stereochemistry.



RN 645378-53-6 CAPLUS

CN 1-Piperidinecarboxylic acid, 4-[(1S)-3-[(1R)-1-[3,5-bis(trifluoromethyl)phenyl]ethyl]methylamino]-1-(4-fluorophenyl)-3-oxopropyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

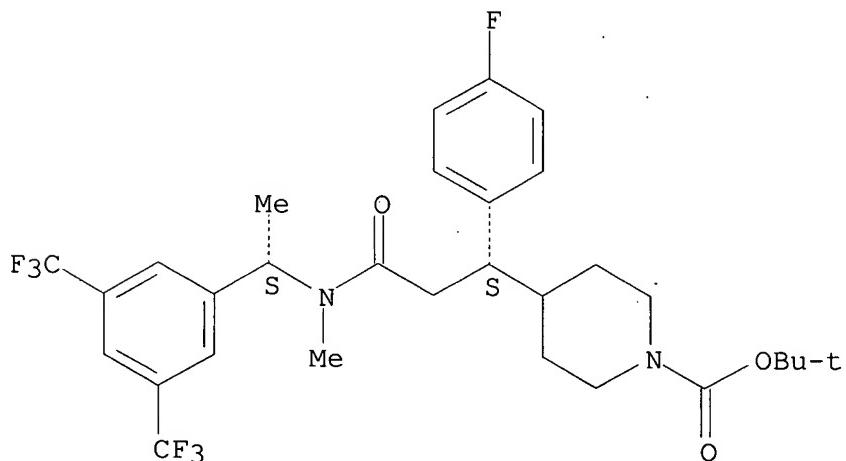
Absolute stereochemistry.



RN 645378-54-7 CAPLUS

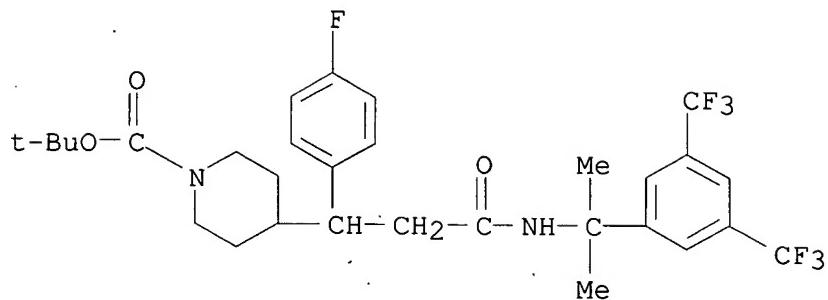
CN 1-Piperidinecarboxylic acid, 4-[(1S)-3-[(1S)-1-[3,5-bis(trifluoromethyl)phenyl]ethyl]methylamino]-1-(4-fluorophenyl)-3-oxopropyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



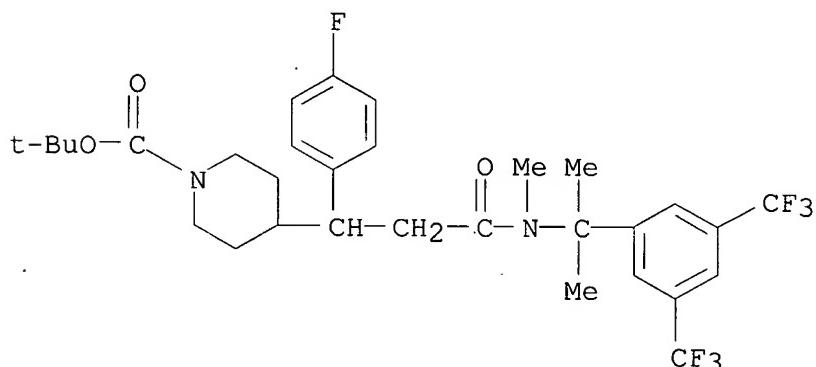
RN 645378-55-8 CAPLUS

CN 1-Piperidinecarboxylic acid,  
4-[[1-[3,5-bis(trifluoromethyl)phenyl]-1-methylethyl]amino]-1-(4-fluorophenyl)-3-oxopropyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



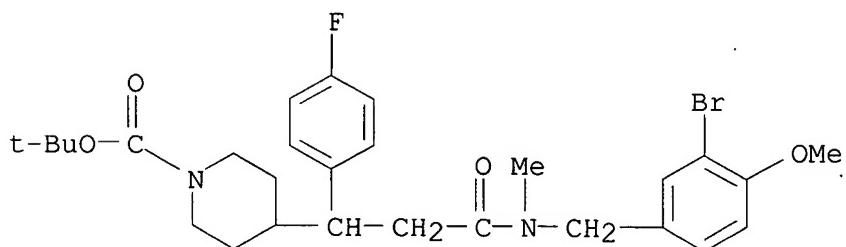
RN 645378-56-9 CAPLUS

CN 1-Piperidinecarboxylic acid,  
4-[3-[(1,1-dimethylethyl)amino]-1-(4-fluorophenyl)-3-oxopropyl]-  
1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 645378-57-0 CAPLUS

CN 1-Piperidinecarboxylic acid, 4-[3-[(3-bromo-4-methoxyphenyl)methyl]methylamino]-1-(4-fluorophenyl)-3-oxopropyl-,  
1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

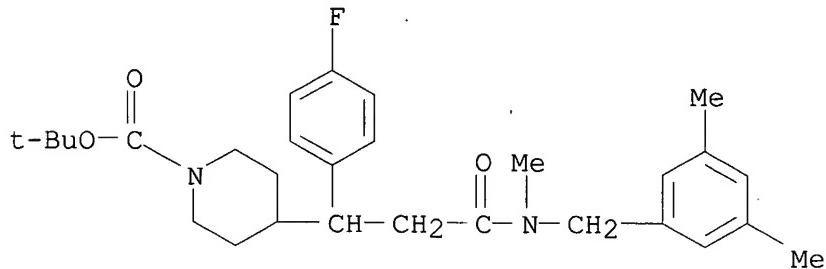


RN 645378-59-2 CAPLUS

CN 1-Piperidinecarboxylic acid,  
4-[3-[(3,5-dimethylphenyl)methyl]methylamino

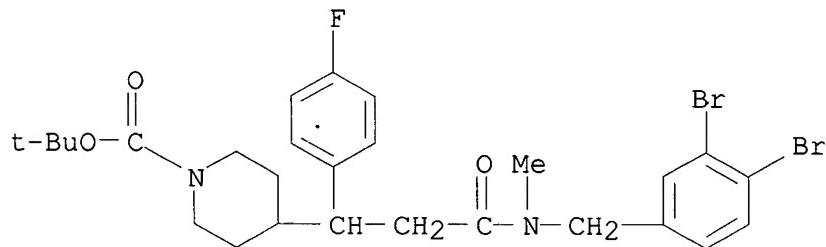
10/782,060

] -1-(4-fluorophenyl)-3-oxopropyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



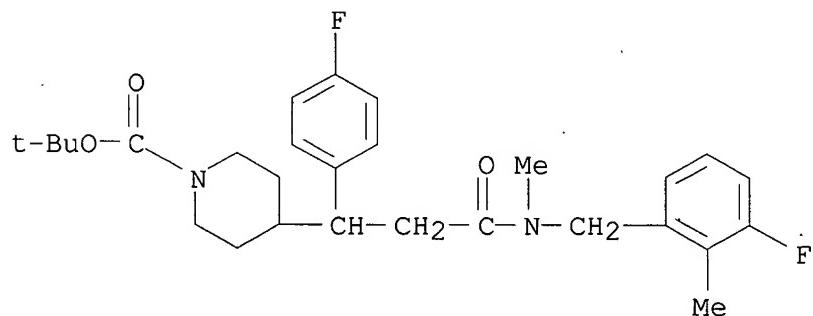
RN 645378-60-5 CAPLUS

CN 1-Piperidinecarboxylic acid,  
4-[3-[[4-(4-fluorophenyl)methyl]methylamino]-  
1-(4-fluorophenyl)-3-oxopropyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



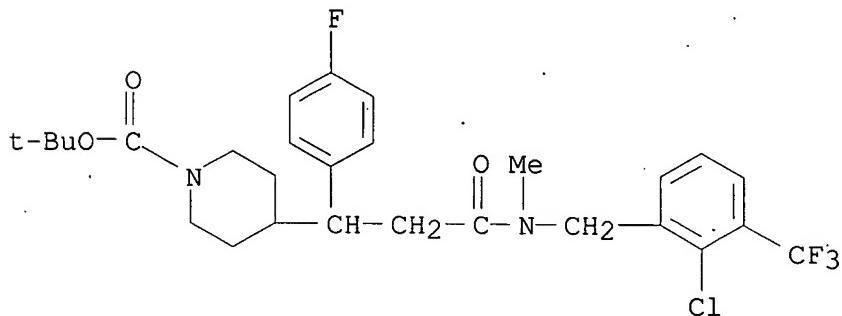
RN 645378-62-7 CAPLUS

CN 1-Piperidinecarboxylic acid, 4-[3-[[4-(4-fluorophenyl)-2-methylphenyl]methyl]methylamino]-1-(4-fluorophenyl)-3-oxopropyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 645378-65-0 CAPLUS

CN 1-Piperidinecarboxylic acid, 4-[3-[[[2-chloro-3-(trifluoromethyl)phenyl]methyl]methylamino]-1-(4-fluorophenyl)-3-oxopropyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Title compds. I [R = halo, alkyl, CN, alkoxy, etc.; R1 = 5-6-membered heteroaryl, etc.; R2 = H, alkyl; R3-4 = H, alkyl, cycloalkyl; R5 = CF<sub>3</sub>, SOO-2, etc.; L = single or double bond; n = 1-3; m = 0-3] are prepared

For

instance, 4-[2-Carboxy-1-(4-fluorophenyl)ethyl]piperidine-1-carboxylic acid tert-Bu ester (preparation given) is coupled to [3,5-bis(trifluoromethyl)benzyl]methylamine and deprotected to give II.

Compds. of the invention have pKi = 10.44 to 7.54 for the NK1 receptor. I

are useful in the treatment of conditions mediated by tachykinins and/or

by selective inhibition of serotonin reuptake transporter protein.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L4 ANSWER 13 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:236053 CAPLUS

DOCUMENT NUMBER: 139:117316

TITLE: Potent and selective aggrecanase inhibitors containing

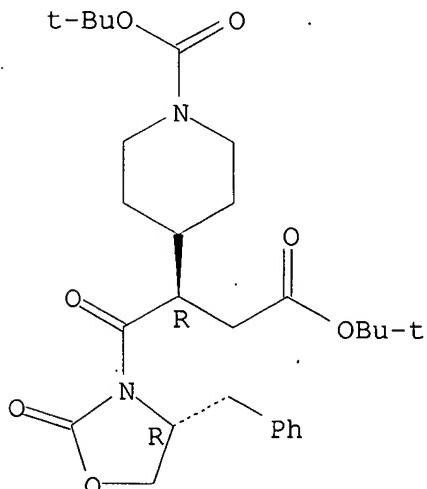
cyclic P1 substituents

AUTHOR(S): Cherney, Robert J.; Mo, Ruowei; Meyer, Dayton T.; Wang, Li; Yao, Wenqing; Wasserman, Zelda R.; Liu, Rui-Qin; Covington, Maryanne B.; Tortorella, Micky D.;

Arner, Elizabeth C.; Qian, Mingxin; Christ, David D.;

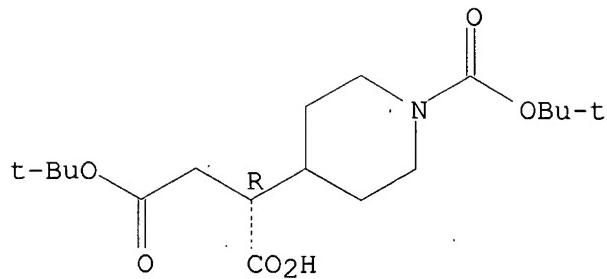
Trzaskos, James M.; Newton, Robert C.; Magolda, Ron L.; Decicco, Carl P.  
CORPORATE SOURCE: Bristol-Myers Squibb Pharmaceutical Research Institute, Princeton, NJ, 08543-4000, USA  
SOURCE: Bioorganic & Medicinal Chemistry Letters (2003), 13(7), 1297-1300  
CODEN: BMCL8; ISSN: 0960-894X  
PUBLISHER: Elsevier Science B.V.  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
OTHER SOURCE(S): CASREACT 139:117316  
IT 561302-52-1P 561302-56-5P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
RACT  
(Reactant or reagent)  
(preparation, aggrecanase- and metalloproteinase-inhibiting  
structure-activity relationship of cyclic P1 substituted  
hydroxamates)  
RN 561302-52-1 CAPLUS  
CN 4-Piperidinepropanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]- $\beta$ -[(4R)-  
2-oxo-4-(phenylmethyl)-3-oxazolidinyl]carbonyl-, 1,1-dimethylethyl  
ester,  
( $\beta$ R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

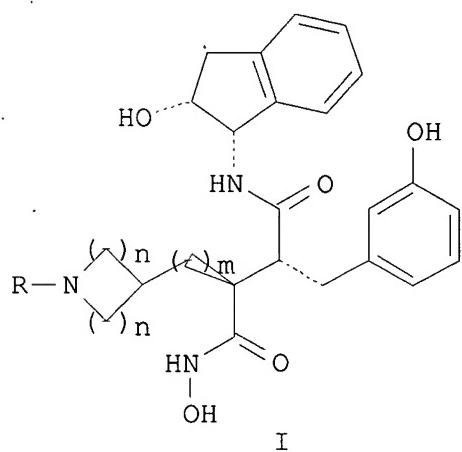


RN 561302-56-5 CAPLUS  
CN Butanedioic acid, [1-[(1,1-dimethylethoxy)carbonyl]-4-piperidinyl]-,  
4-(1,1-dimethylethyl) ester, (2R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



GI



AB Anti-succinate hydroxamates I ( $R = \text{Boc}, \text{H}, \text{COMe}$ , etc.,  $m = 0, n = 1-2$ ;  
 $R =$

$\text{COMe}, \text{COEt}$ ,  $m = 1, n = 2$ ) with cyclic P1 motifs were prepared from substituted acetic acids as aggrecanase inhibitors. The

N-methanesulfonyl

piperidine I ( $R = \text{SO}_2\text{Me}, m = 0, n = 2$ ) and the N-trifluoroacetyl azetidine

I ( $R = \text{COCF}_3, m = 0, n = 1$ ) were the most potent aggrecanase inhibitors both having an  $\text{IC}_{50}=3$  nM while maintaining >100-fold selectivity over MMP-1, -2, and -9. The cyclic moieties were also capable of altering in

vivo metabolism, hence delivering low clearance compds. in both rat and dog

studies as shown for I ( $R = \text{H}, m = 0, n = 2$ ).

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L4 ANSWER 14 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1999:511143 CAPLUS  
 DOCUMENT NUMBER: 131:170361  
 TITLE: Preparation of sulfonamides as inhibitors of activated blood coagulation factor X  
 INVENTOR(S): Tawada, Hiroyuki; Itoh, Fumio; Banno, Hiroshi; Terashita, Zenichi  
 PATENT ASSIGNEE(S): Takeda Chemical Industries, Ltd., Japan  
 SOURCE: PCT Int. Appl., 187 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

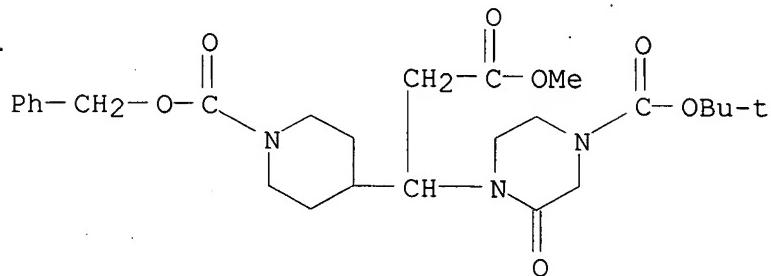
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9940075	A1	19990812	WO 1999-JP470	19990204
W: AL, AM, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CU, CZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TJ, TM, TR, TT, UA, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2317017	A1	19990812	CA 1999-2317017	19990204
AU 9922988	A	19990823	AU 1999-22988	19990204
JP 2000204081	A	20000725	JP 1999-27053	19990204
EP 1054005	A1	20001122	EP 1999-902829	19990204
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
US 6403595	B1	20020611	US 2000-601660	20000803
US 2002193382	A1	20021219	US 2002-128809	20020424
US 6680312	B2	20040120		
PRIORITY APPLN. INFO.:			JP 1998-24833	A 19980205
			JP 1998-317205	A 19981109
			WO 1999-JP470	W 19990204
			US 2000-601660	A3 20000803

OTHER SOURCE(S): MARPAT 131:170361  
 IT 239073-60-0P 239073-61-1P 239073-62-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
 RACT (Reactant or reagent)  
 (preparation of sulfonamides as inhibitors of activated blood coagulation factor X)

10/782,060

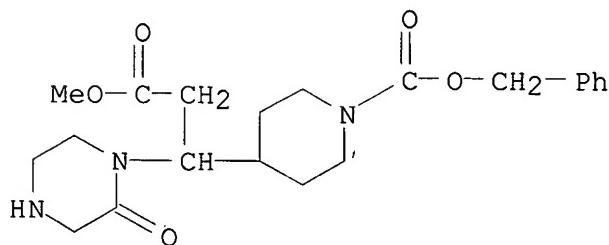
RN 239073-60-0 CAPLUS

CN 1-Piperazinepropanoic acid, 4-[(1,1-dimethylethoxy)carbonyl]-2-oxo- $\beta$ -[1-[(phenylmethoxy)carbonyl]-4-piperidinyl]-, methyl ester (9CI) (CA INDEX NAME)



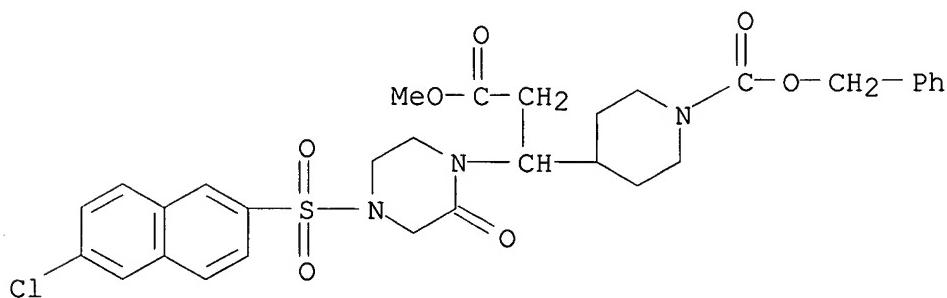
RN 239073-61-1 CAPLUS

CN 1-Piperazinepropanoic acid, 2-oxo- $\beta$ -[1-[(phenylmethoxy)carbonyl]-4-piperidinyl]-, methyl ester (9CI) (CA INDEX NAME)

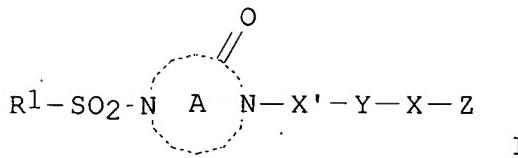


RN 239073-62-2 CAPLUS

CN 1-Piperazinepropanoic acid,  
4-[(6-chloro-2-naphthalenyl)sulfonyl]-2-oxo-  
 $\beta$ -[1-[(phenylmethoxy)carbonyl]-4-piperidinyl]-, methyl ester (9CI)  
(CA INDEX NAME)



GI



AB The title compds. I [ R1 represents a hydrocarbyl or heterocyclic group each optionally substituted; the ring A represents a divalent nitrogen-containing heterocycle group optionally further substituted;

X' represents optionally substituted alkylene; Y represents an optionally substituted divalent cyclic group; X represents a bond or optionally substituted alkylene; and Z represents optionally substituted amino, optionally substituted imidoyl, or an optionally substituted nitrogen-containing heterocyclic group] are prepared. Formulations containing a

compound of this invention are given. In a test for inhibiting activity of

title compds. against activated blood coagulation factor X, 1-(4-amidinobenzyl)-4-(6-chloronaphthalene-2-sulfonyl)-2-piperazinone hydrochloride showed IC<sub>50</sub> of 0.05 μM.

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 15 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1998:324824 CAPLUS

DOCUMENT NUMBER: 129:27961

TITLE: Preparation of heterocyclyl-substituted piperazines for the prevention or treatment of a disease mediated

by the binding of adhesion molecules to GPIIb/IIIa  
INVENTOR(S): Mills, Stuart Dennett

PATENT ASSIGNEE(S): Zeneca Ltd., UK

SOURCE: U.S., 68 pp., Cont.-in-part of U.S. 5,563,141.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 5

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5753659	A	19980519	US 1995-458180	19950602
US 5563141	A	19961008	US 1994-218174	19940328
US 5750754	A	19980512	US 1996-658097	19960604
PRIORITY APPLN. INFO.:			GB 1993-6451	A 19930329

GB 1993-25610	A 19931215
US 1994-218174	A2 19940328
GB 1993-6453	A 19930329
GB 1993-25605	A 19931215
GB 1995-18188	A 19950907

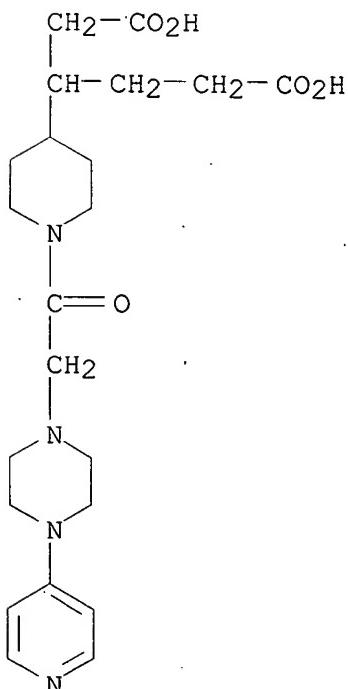
IT 166951-31-1P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use);

BIOL (Biological study); PREP (Preparation); USES (Uses) (preparation of heterocyclyl-substituted piperazines for the prevention or treatment of a disease mediated by the binding of adhesion mols. to GPIIb/IIIa)

RN 166951-31-1 CAPLUS

CN Hexanedioic acid, 3-[1-[[4-(4-pyridinyl)-1-piperazinyl]acetyl]-4-piperidinyl]- (9CI) (CA INDEX NAME)



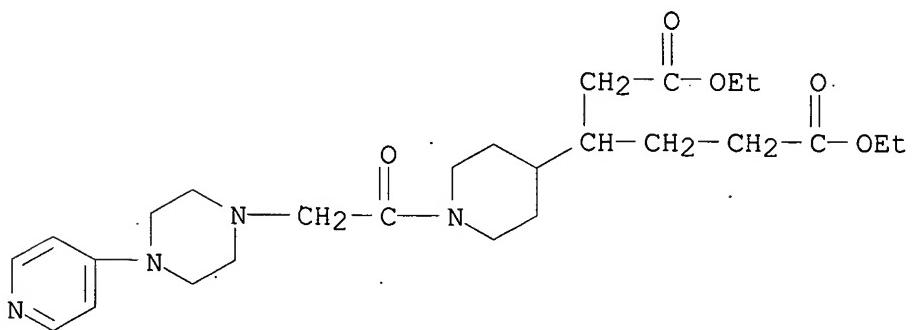
IT 207913-43-7

RL: RCT (Reactant); RACT (Reactant or reagent) (preparation of heterocyclyl-substituted piperazines for the prevention or

treatment of a disease mediated by the binding of adhesion mols. to  
GPIIb/IIIa)

RN 207913-43-7 CAPLUS

CN Hexanedioic acid, 3-[1-[[4-(4-pyridinyl)-1-piperazinyl]acetyl]-4-piperidinyl]-, diethyl ester (9CI) (CA INDEX NAME)



AB The title compds. [(M1)<sub>n</sub>-Q-(M2)1-n-L-A; n = 0-1; M1 = NH<sub>2</sub>; Q = an aromatic

heterocyclic group containing N atom; M2 = imino; L = template; A = an acidic

group, or its ester or amide, or sulfonamide] and their pharmaceutically acceptable salts and pro-drugs, useful for the prevention or treatment of

a disease mediated by the binding of adhesion mols. to GPIIb/IIIa, for the inhibition of platelet aggregation, and for the treatment of unstable angina. Thus, reaction of Me 4-bromoacetylphenoxyacetate with 1-(4-pyridyl)piperazine in MeCN afforded Me

4-{2-[4-(4-pyridyl)piperazin-1-yl]acetyl}phenoxyacetate which showed pIC<sub>50</sub> of 5.8-6.4 against binding of fibrinogen to GPIIb/IIIa.

REFERENCE COUNT: 68 THERE ARE 68 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 16 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1998:126254 CAPLUS

DOCUMENT NUMBER: 128:204878

TITLE: Preparation of pyrazinobenzothiazine derivatives and

analogs for the treatment of inflammation and autoimmune diseases

INVENTOR(S): Kaneko, Toshihiko; Clark, Richard; Ohi, Norihito; Ozaki, Fumihiro; Kawahara, Tetsuya; Kamada, Atsushi;

Okano, Kazuo; Yokohama, Hiromitsu; Muramoto, Kenzo;  
 Arai, Tohru; Ohkuro, Masayoshi; Takenaka, Osamu;  
 Sonoda, Jiro

PATENT ASSIGNEE(S): Eisai Co., Ltd., Japan  
 SOURCE: PCT Int. Appl., 1344 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9806720	A1	19980219	WO 1997-JP2787	19970808
W: AU, CA, CN, HU, JP, KR, MX, NO, NZ, RU, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,				
PT, SE				
CA 2262569	A1	19980219	CA 1997-2262569	19970808
AU 9737849	A	19980306	AU 1997-37849	19970808
ZA 9707103	A	19990208	ZA 1997-7103	19970808
EP 934941	A1	19990811	EP 1997-934750	19970808
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT,				
IE, FI				
US 6518423	B1	20030211	US 1999-230852	19990405
US 2004092737	A1	20040513	US 2002-247310	20020920
PRIORITY APPLN. INFO.:			JP 1996-210344	A 19960809
			WO 1997-JP2787	W 19970808
			US 1999-230852	A3 19990405

OTHER SOURCE(S): MARPAT 128:204878

IT 203662-40-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
 RACT

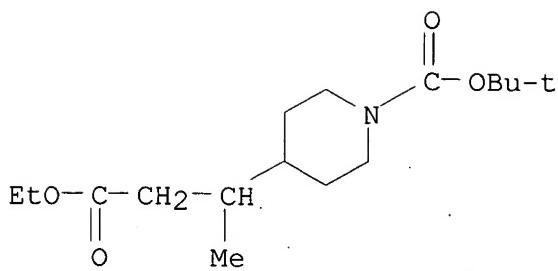
(Reactant or reagent)

(preparation of pyrazinobenzothiazine derivs. and analogs for  
 treatment of

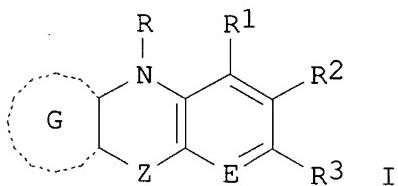
inflammation and autoimmune diseases)

RN 203662-40-2 CAPLUS

CN 4-Piperidinepropanoic acid, 1-[(1,1-dimethylethoxy)carbonyl]- $\beta$ -methyl-, ethyl ester (9CI) (CA INDEX NAME)



GI



AB The title compds. I [R1 to R3 are the same or different and each represents hydrogen, optionally substituted lower alkyl, optionally substituted cycloalkyl, etc., provided that when R1 to R3 are all optionally substituted lower alkyl groups, they do not simultaneously represent Me groups; R represents hydrogen, lower alkyl, etc.; E represents N, C, etc.; Z represents O, S, SO, SO<sub>2</sub>, etc.; and the ring G represents an optionally substituted heteroaryl ring having at least one

nitrogen atom] are prepared I are useful in the treatment and prevention of

inflammatory immunol. diseases, autoimmune diseases, rheumatism, collagen

disease, asthma, nephritis, ischemic reflow disorders, psoriasis, atopic

dermatitis or rejection reactions following organ transplantation. The compound (syn)-[3-(10H-pyrazino[2,3-b][1,4]benzothiazin-8-ylmethyl)-3-azabicyclo[3.3.1]nona-9-yl]acetic acid (II) at 10 mg/kg orally gave 65% inhibition of carrageenin-induced inflammation in rats. II in vitro showed IC<sub>50</sub> of 2.3 μM against the expression of ICAM-1.

REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 17 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1995:758624 CAPLUS

DOCUMENT NUMBER: 123:169654

TITLE: Preparation of heterocyclic compounds as platelet

INVENTOR(S): aggregation inhibitors  
 Wayne, Michael Garth; Smithers, Michael James;  
 Rayner,  
 John Wall; Faull, Alan Wellington; Pearce, Robert  
 James; Brewster, Andrew George; Shute, Richard  
 Eden;  
 Mills, Stuart Dennett; Caulkett, Peter William  
 Rodney  
 PATENT ASSIGNEE(S): Zeneca Ltd., UK  
 SOURCE: PCT Int. Appl., 236 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 5  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9422835	A2	19941013	WO 1994-GB648	19940328
WO 9422835	A3	19941222		
W: AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, LV, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TT, UA, UZ, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
CA 2155307	A1	19941013	CA 1994-2155307	19940328
AU 9462890	A	19941024	AU 1994-62890	19940328
AU 692439	B2	19980611		
EP 690847	A1	19960110	EP 1994-910495	19940328
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
JP 08509967	T	19961022	JP 1994-521811	19940328
JP 3088016	B2	20000918		
US 5750754	A	19980512	US 1996-658097	19960604
PRIORITY APPLN. INFO.:			GB 1993-6451	A 19930329
			GB 1993-25610	A 19931215
			GB 1993-6453	A 19930329
			GB 1993-25605	A 19931215
			WO 1994-GB648	W 19940328
			GB 1995-18188	A 19950907

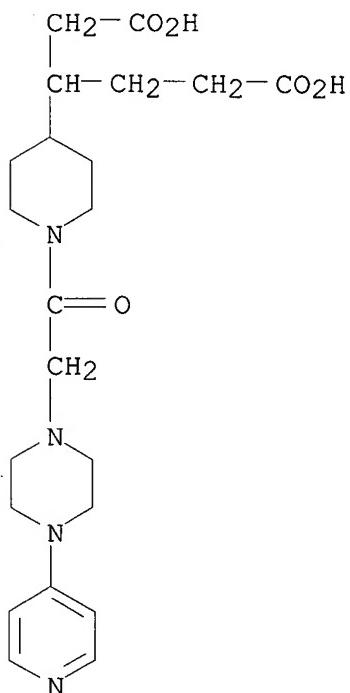
OTHER SOURCE(S): MARPAT 123:169654  
 IT 166951-31-1P  
 RL: BAC (Biological activity or effector, except adverse); BSU  
 (Biological  
 study, unclassified); SPN (Synthetic preparation); THU (Therapeutic  
 use);

10/782,060

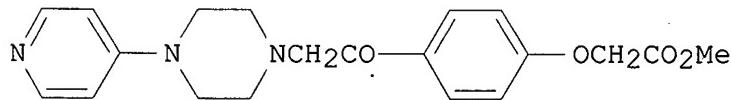
BIOL (Biological study); PREP (Preparation); USES (Uses)  
(preparation of heterocyclic compds. as platelet aggregation  
inhibitors)

RN 166951-31-1 CAPLUS

CN Hexanedioic acid, 3-[1-[[4-(4-pyridinyl)-1-piperazinyl]acetyl]-4-  
piperidinyl]- (9CI) (CA INDEX NAME)



GI



I

AB Title compds. [I; (M1)nQ(M2)1-nLA wherein = 0, 1; M1 = amino; Q = N-heterocyclyl; M2 = imino; L = template; A = an acidic group, or ester,

amide derivative, sulfonamide] and pharmaceutically acceptable salts and

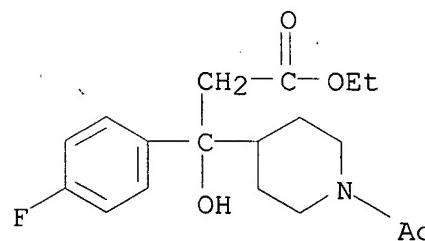
pro-drugs thereof are prepared Me 4-(bromoacetyl)phenoxyacetate in MeCN was

added to 1-(4-pyridyl)piperazine in MeCN to give the title compd II. Platelet aggregation inhibition was demonstrated by I. Pharmaceutical formulations comprising I are given.

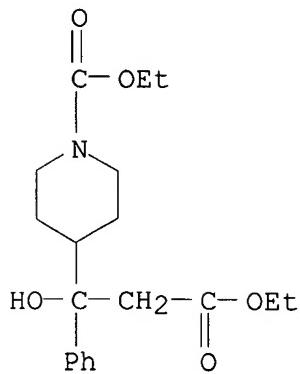
L4 ANSWER 18 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1982:406179 CAPLUS  
 DOCUMENT NUMBER: 97:6179  
 TITLE: 4-Aryl-1-oxa-8-azaspiro[4.5]dec-3-en-2-ones  
 INVENTOR(S): Brown, John J.; Hardy, Robert A., Jr.  
 PATENT ASSIGNEE(S): American Cyanamid Co., USA  
 SOURCE: U.S., 10 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4321379	A	19820323	US 1981-229043	19810128
PRIORITY APPLN. INFO.:			US 1981-229043	19810128

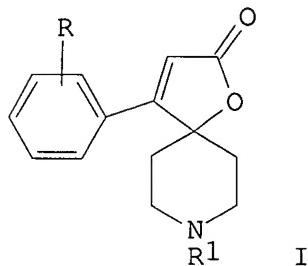
OTHER SOURCE(S): CASREACT 97:6179; MARPAT 97:6179  
 IT 82074-13-3P 82074-38-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
 RACT  
 (Reactant or reagent)  
 (preparation and cyclization of)  
 RN 82074-13-3 CAPLUS  
 CN 4-Piperidinepropanoic acid, 1-acetyl-β-(4-fluorophenyl)-β-  
 hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



RN 82074-38-2 CAPLUS  
 CN 4-Piperidinepropanoic acid, 1-(ethoxycarbonyl)-β-hydroxy-β-  
 phenyl-, ethyl ester (9CI) (CA INDEX NAME)



GI

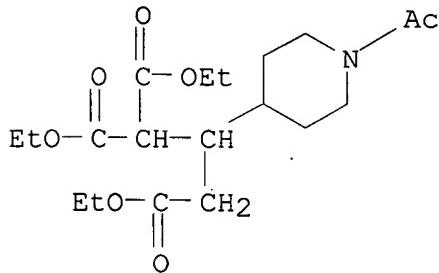


AB      Analgesic and neuroleptic (no data) oxaazaspirodecenones I [R = H, F, Cl, CF<sub>3</sub>; R<sub>1</sub> = H, (un)substituted alkyl, acyl] and their 3,4-dihydro derivs. were prepared Thus 1-acetyl-4-(4-fluorobenzoyl)piperidine was treated with BrCH<sub>2</sub>CO<sub>2</sub>Et, followed by cyclization with H<sub>2</sub>SO<sub>4</sub>, to give I (R = 4-F, R<sub>1</sub> = Ac).

L4      ANSWER 19 OF 22    CAPLUS    COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER:            1954:71735    CAPLUS  
 DOCUMENT NUMBER:            48:71735  
 ORIGINAL REFERENCE NO.:    48:12744h  
 TITLE:                        Synthesis of 2,3-substituted quinuclidines  
 AUTHOR(S):                  Rubtsov, M. V.; Mikhлина, Е. Е.  
 SOURCE:                      Zhurnal Obshchey Khimii (1953), 23, 861-5  
 CODEN: ZOKHA4; ISSN: 0044-460X  
 DOCUMENT TYPE:             Journal  
 LANGUAGE:                   English  
 IT      873375-47-4P, 1,1,3-Propanetricarboxylic acid,  
 2-(1-acetyl-4-piperidyl)-, triethyl ester  
 RL: PREP (Preparation)

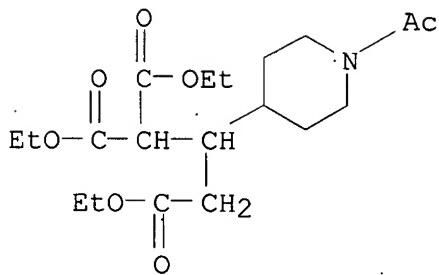
10/782,060

(preparation of)  
RN 873375-47-4 CAPLUS  
CN 1,1,3-Propanetricarboxylic acid, 2-(1-acetyl-4-piperidyl)-, triethyl ester  
(5CI) (CA INDEX NAME)



AB See C.A. 48, 3978a.

L4 ANSWER 20 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1954:71734 CAPLUS  
DOCUMENT NUMBER: 48:71734  
ORIGINAL REFERENCE NO.: 48:12744g-h  
TITLE: Relative basicities of atoms of nitrogen in compounds  
of the type of 2-aminopyridine and N-alkyl-2-pyridonimine  
AUTHOR(S): Gol'dfarb, Ya. L.; Pryanishnikova, M. A.; Zhukova, K.  
A.  
SOURCE: Bulletin of the Academy of Sciences of the USSR,  
Division of Chemical Science (English Translation)  
(1953) 129-35  
CODEN: BACCAT; ISSN: 0568-5230  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
IT 873375-47-4P, 1,1,3-Propanetricarboxylic acid,  
2-(1-acetyl-4-piperidyl)-, triethyl ester  
RL: PREP (Preparation)  
(preparation of)  
RN 873375-47-4 CAPLUS  
CN 1,1,3-Propanetricarboxylic acid, 2-(1-acetyl-4-piperidyl)-, triethyl ester  
(5CI) (CA INDEX NAME)



AB See C.A. 48, 3358i.

L4 ANSWER 21 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1954:49458 CAPLUS

DOCUMENT NUMBER: 48:49458

ORIGINAL REFERENCE NO.: 48:8782a-d

TITLE: Synthesis of 2,3-disubstituted quinuclidines

AUTHOR(S): Rubtsov, M. V.; Mikhлина, Е. Е.

CORPORATE SOURCE: S. Ordzhonikidze All-Union Chem.-Pharm. Inst.,

Moscow

SOURCE: Doklady Akademii Nauk SSSR (1953), 88, 1003-6

CODEN: DANKAS; ISSN: 0002-3264

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

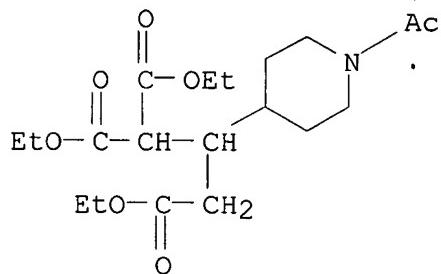
IT 873375-47-4P, 1,1,3-Propanetricarboxylic acid,  
2-(1-acetyl-4-piperidyl)-, triethyl ester

RL: PREP (Preparation)  
(preparation of)

RN 873375-47-4 CAPLUS

CN 1,1,3-Propanetricarboxylic acid, 2-(1-acetyl-4-piperidyl)-, triethyl  
ester

(5CI) (CA INDEX NAME)



AB cf. C.A. 48, 3978a. Condensation of an equimolar mixture of  
CH<sub>2</sub>(CO<sub>2</sub>Et)<sub>2</sub> and

Et 3-(4-pyridyl)acrylate in EtOH with EtONa catalyst 5-6 hrs. at room  
temperature or 1 hr. at 60° gave 94% Et 3-dicarbethoxymethyl-3-(4-  
pyridyl)propionate (I), b0.2 173-5° (some decomposition). This boiled

with concentrated HCl gave 3-(4-pyridyl)glutaric acid, identified as the di-Et ester, b0.2 146-8°. I.HCl was hydrogenated over PtO<sub>2</sub> at room temperature

in EtOH to the piperidine analog (II), noncryst. mass decomposing on attempted distillation; heated with Ac<sub>2</sub>O it gave Et 3-dicarbethoxymethyl-3-(1-acetyl-4-piperidyl)propionate, b0.3 206-7°. II with Br gave Et 3-dicarbethoxybromomethyl-3-(4-piperidyl)propionate, which with hot pyridine gave 72% Et (2,2-dicarbethoxy-3-quinuclidyl)acetate, b0.25 147-8°, n<sub>20D</sub> 1.4793; methiodide, m. 139-41° (from EtOH-Et<sub>2</sub>O). Refluxed 16 hrs. with concentrated HCl the ester gave 91.5%

(2-carboxy-3-quinuclidyl)acetic acid-HCl, decompose 254-5°. The calculated amount of alc. NH<sub>3</sub> gave 87% free acid (III), m. 273°, soluble in

H<sub>2</sub>O, nearly insol. in absolute EtOH; isolation of the acid through the Ag salt

gave but 43.8% yield owing to the insol. of the Ag salt. The acid with

EtOH-HCl or the acyl chloride with EtOH gave the di-Et ester, b0.3 126°, n<sub>20D</sub> 1.4797. This with LiAlH<sub>4</sub> gave 88.7% 2-hydroxymethyl-3-(2-hydroxyethyl)quinuclidine, b0.4 156-7°, yielding with SOCl<sub>2</sub> the 2-chloromethyl-3-(2-chloroethyl)quinuclidine, b0.25 120-2°, which on standing forms a spongy solid, probably a polymer; this process is accelerated by heat (distillation). Heating the acyl

dichloride of III.HCl with Et<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>OH yields bis(diethylaminoethyl)ester of III, b0.3 187-9° (methiodide, decompose 197-9°).

L4 ANSWER 22 OF 22 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1954:21861 CAPLUS

DOCUMENT NUMBER: 48:21861

ORIGINAL REFERENCE NO.: 48:3978a-f

TITLE: Synthesis of 2,3-substituted quinuclidines

AUTHOR(S): Rubtsov, M. V.; Mikhlina, E. E.

CORPORATE SOURCE: S. Ordzhonikidze All-Union Chem.-Pharm. Inst.,

Moscow

SOURCE: Zhurnal Obshchei Khimii (1953), 23, 823-8

CODEN: ZOKHA4; ISSN: 0044-460X

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 48:21861

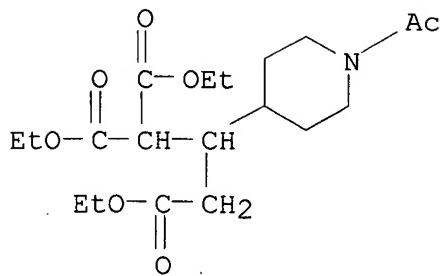
IT 873375-47-4P, 1,1,3-Propanetricarboxylic acid,  
2-(1-acetyl-4-piperidyl)-, triethyl ester

RL: PREP (Preparation)  
(preparation of)

RN 873375-47-4 CAPLUS

CN 1,1,3-Propanetricarboxylic acid, 2-(1-acetyl-4-piperidyl)-, triethyl ester.

(5CI) (CA INDEX NAME)



AB To 1.25 g. Na in 20 ml. absolute EtOH was added 8.7 g.  $\text{CH}_2(\text{CO}_2\text{Et})_2$  and 9.6 g.

Et Et 4-pyridineacrylate, and the mixture stirred 1 hr. at 60° and treated with very dilute AcOH and extracted with Et<sub>2</sub>O, yielding 94.2%

Et

$\beta$ -[bis(ethoxycarbonyl)methyl]-4-pyridinepropionate, b0.2 173-5° (some decomposition); HCl salt (I), m. 121-2° (from EtOH-Et<sub>2</sub>O). This (4.4 g.) refluxed 8 hrs. with 44 ml. concentrated HCl gave

3-(4-pyridyl)glutaric acid-HCl, which, heated 3 hrs. with 35 ml. 5% alc.

HCl, concentrated in vacuo, treated with K<sub>2</sub>CO<sub>3</sub>, and extracted with Et<sub>2</sub>O, yielded

84.4% di-Et ester, b0.2 146-8°, I reduced over Pt oxide in EtOH to Et  $\beta$ -[bis(ethoxycarbonyl)methyl]-4-piperidinepropionate, isolated as the HCl salt (II), a taffy-like mass; the free base is amorphous; treatment with Ac<sub>2</sub>O gave the 1-Ac derivative, b0.3 206-7°. II (from 47.8 g. pyridine analog) in dry CHCl<sub>3</sub> treated over 8 hrs. with 20.4 g.

Br

in CHCl<sub>3</sub>, allowed to stand 12-14 hrs., concentrated, treated with H<sub>2</sub>O and K<sub>2</sub>CO<sub>3</sub>,

and extracted with Et<sub>2</sub>O yielded crude Et  $\beta$ -[bis(ethoxycarbonyl)bromomethyl]

1]-4-piperidinepropionate, which, boiled 2 hrs. with 390 ml. pyridine, concentrated, and treated with 50% K<sub>2</sub>CO<sub>3</sub> gave 72% Et 2,2-dicarbothoxy-3-

quinuclidineacetate, b0.25 147-8°; methiodide, m. 139-41° (from EtOH-Et<sub>2</sub>O). The ester refluxed 16 hrs. with concentrated HCl gave

2-carboxy-3-quinuclidineacetic acid-HCl (III), decompose 253-4° (from aqueous Me<sub>2</sub>CO); the pure product decompose 254-5° (from EtOH-Et<sub>2</sub>O).

This

(0.4 g.) 1.1 g. Ag<sub>2</sub>O, and 6 ml. H<sub>2</sub>O shaken 2 hrs., diluted, heated to the

b.p., filtered, saturated with H<sub>2</sub>S, filtered, and evaporated gave 43.8% 2-carboxy-3-quinuclidineacetic acid, m. 265-7°; an 87.6% yield is obtained with alc. NH<sub>3</sub>. III (7 g.) heated with 100 ml. SOCl<sub>2</sub> 10 hrs.

at

70°, freed of SOCl<sub>2</sub>, and the resulting acyl chloride-HCl (IV) refluxed 3 hrs. with EtOH gave 82.7% di-Et 2-carboxy-3-

10/782,060

quinuclidineacetate, b0.3 126°, n<sub>20D</sub> 1.4797, (also obtained from III and 5% alc. HCl refluxed 6 hrs.); methiodide, m. 140-1° (from EtOH-Et<sub>2</sub>O). The ester (8.2 g.) in Et<sub>2</sub>O treated with 4.64 g. LiAlH<sub>4</sub> suspended in Et<sub>2</sub>O, boiled 1 hr., and treated with 9 ml. H<sub>2</sub>O gave 88.7% 2-hydroxymethyl-3-(2-hydroxyethyl)quinuclidine, b0.4 156-7°; HCl salt, hygroscopic solid. The latter (5.22 g.) in dry CHCl<sub>3</sub> treated with

18 ml. SOCl<sub>2</sub>, boiled 0.5 hr., and concentrated in vacuo, gave 94% 2-chloromethyl-3-(2-chloroethyl)quinuclidine-HCl, m. 139-40°; with 50% K<sub>2</sub>CO<sub>3</sub> it gave the free base, b0.25 120-2°, which forms a methiodide, m. 136°. IV (from 3 g. acid HCl salt) and 40 ml. Et<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>OH kept 3.5 hrs. at 80-5° gave 63% bis(2-diethylaminoethyl) ester, b0.3 187-9°, of 2-carboxy-3-quinuclidineacetic acid; trimethiodide, decompose 197-9°.

=> log y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	116.41	288.72
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-17.16	-17.16

STN INTERNATIONAL LOGOFF AT 14:48:21 ON 10 FEB 2007